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The EDITOR'S CORNER

Are Prices Coming Down?

IN VIEW of the recent utterances of Irving Fisher, professor of political economy, Yale University, to the effect that prices are going to stay as they are, no doubt most clay products manufacturers have felt that there is no further reduction to be expected for some time. Mr. Fisher, it will be remembered, stated that we are on a permanently higher price level and says that the main reason why business is not going ahead better is that most people expect prices to drop. The merchant is selling but not buying. People quote disparity between present prices and those prevailing before the war, and decide they will not buy much until present prices get down to "normal." This general conviction that prices are sure to drop is putting a brake upon the entire machinery of production and distribution.

However, on the other hand, Dr. Charles W. Gerstenberg, professor of finance, New York University, predicts a period of business depression. He says: "Prices, it seems to me, will fall; first, because the demand for goods will decrease thru the cessation of war; second, because the supply relatively will increase, and third, because currency will decrease in volume."

Now who will we believe?

A St. Louis fire brick manufacturer says that he believes that present prices are not going to decrease for some time, and then so gradually that business and prosperity will be stimulated, rather than depressed, by the process.

He agrees with Professor Fisher—as to the war establishing a permanently higher level of prices, but does not believe *that* level to be synonymous with the abnormal, inflated peak level we have been having and from which prices in numerous lines have already declined.

Just how far they will decline is a matter which no one can say at the present time. This particular manufacturer believes that they will finally stop at a permanent level somewhere between the present point and the low "before-the-war" level. They will come down so gradually that wages will decline with them but not in purchasing power. This means that labor can be expected to generally accept lower wages, because the workingman will be able to get just as much for his money as he does now.

This opinion is certainly well worth consideration and study. In substantiation of this theory, it is pointed out that prices have already come down in a

great many industries, the steel industry being a notable example. In the very business in which this manufacturer is engaged, namely the making of fire brick, reductions have been made on standard shapes to such an extent that it is believed a level has now been reached below which the public should not expect to buy for some time to come.

We believe the course for the American manufacturer to pursue is this: Believe that prices will fall so gradually that you cannot afford to stand still, holding up purchases and other activities in any way. Be careful but at the same time be confident. What business needs most right now is *boosters*. Boost your own business and all business as well, with aggressive sales and advertising effort. In all your merchandising activities, talk *quality* and *service* rather than price. Build and make repairs, if for no other reason than to give men employment. Encourage public improvements in your community, county and state. Let your motto be, "Full steam ahead!"

✻ ✻ ✻

Alien Exodus

IN LAST ISSUE was pointed out the great need for labor-saving methods and equipment. It was stated that a large number of men will be required to take care of the summer and fall crop harvest; we mentioned the possibilities in construction work and pointed out that a general resumption of building was in progress which would require a large force of labor. Thirdly, we told of the work that is going on in road building. We also stated that on top of this, many foreigners were planning to return to their native land when peace is signed and conditions are settled in Europe. However, we did not at that time know just to what extent this latter condition was taking place, but since learned from recent reports that the exodus to foreign lands is promising to be enormous.

Ethelbert Stewart, of Chicago, director of the investigation and inspection service of the department of labor, after an investigation of prospective emigration from America, has reported that one million three hundred thousand aliens in the United States are planning to desert this country for their homeland and they will take with them approximately four billion American dollars.

Of the several hundred thousand people included in an investigation which covered Chicago, Detroit, Pittsburgh, and surrounding steel mills, Johnstown, Youngstown and Wilkesbarre, and the surrounding coal mining area, about 15 per cent. of the Poles will

return to Poland. Other foreigners range as follows in their desire to return to their fatherlands: Austro-Hungarians, 28.02 per cent.; Russians, 35.70 per cent.; Croatians, 21.75 per cent.; Lithuanians, 9.72 per cent.; Roumanians, 62.29 per cent.; Italians and Greeks, 11 per cent.; Serbs, 36.90 per cent.; and Slovaks, 34.50 per cent.

This general exodus of foreigners is bound to affect labor conditions either directly or indirectly in the clay products industry. Once again a warning note is sounded. Be prepared to meet the situation when it comes!

* * *

Car Shortage Again!

LIKE THE GHOST of Hamlet's father which was doomed to walk on this earthly sphere at specified intervals, the car shortage spectre which haunted the clay products manufacturer for a long period in 1917, and at least once a year prior to that time, is again manifesting his foreboding shadow.

A sewer-pipe concern is circulating an envelope enclosure reading: "The railroads are already collecting equipment for the movement of crops. Car shortage is unavoidable. To insure service please anticipate your requirements of sewer-pipe, drain tile, wall coping, flue lining and fire brick, and order them forwarded now." This brief, terse message ought to be a suggestion to every clay products manufacturer. It would not be a bad idea at all for others of our readers to adopt this idea and "go thou and do likewise," with regard to having printed a similar enclosure for mailing out.

Manufacturers of other building materials are recognizing the possibility of a distressing shortage of railroad equipment and are urging their dealers to lay in a stock of material *now*. The clay products manufacturer would do well to follow suit. A circular letter or even a telegram to your local representatives should be sent, urging that they buy that car of brick, sewer pipe, building tile, drain tile, or other clay products now, and not wait until the car shortage is upon the nation's manufacturers to send in a hurry-up order that cannot possibly be shipped within the specified time.

* * *

The Passing of the Small Open Yard

EXCESSIVE FREIGHT RATES have affected the industry considerably. They are largely responsible for the gradual disappearance of the small soft mud, open yards that at one time were scattered thruout the country and very often are now found in a few small towns which cannot support a brick factory. These small yards find it almost impossible to ship to outside points at the present time owing to high rates. This, coupled with the cost of

fuel and labor, together with the difficulty of getting labor to work in these small yards, has exerted a tremendous pressure on these plants and gradually they are numbering less and less.

In one large city in Illinois, for instance, where there were fifteen small plants close at hand, now there is nary a one. In a large city in Canada where formerly there were twenty-five small soft mud yards, this number has dwindled down to two with prospects of these two closing up very soon. What is true of these localities is true of others. The small open yard is being supplanted by larger and more centralized plants where labor-saving equipment and increased capacity has made it possible to make brick at a sufficiently low cost to offset to some extent the high freight rates.

* * *

And Now an Association Building

IT HAS CERTAINLY been exceedingly interesting to watch the surprisingly rapid growth of trade associations in the United States. It is only a few years ago that cooperative effort among business men in allied lines was very much of an up-hill fight. Associations in most industries not very far back were nothing more than what seemed to be a forlorn hope.

The world war has worked, however, many changes in industry, emphasizing the necessity for trade associations. Increase in the size and number of associations has been rapid, and now organized effort has reached the point where a national association building is under construction, which will provide needed headquarters for trade associations and similar bodies. This building will be located near Fifth Avenue and Forty-fourth Street, New York.

This is certainly association work intensified.

Clay Products Manufacture—

as it is carried on in Canada is the text of an article, written from an inspection of twenty Canadian plants, to appear in our

—Next Issue

A PLEA *with a* PUNCH for FREIGHT RATE RELIEF

Masterful Array of Facts, Representing the Fruits of Months of Work, Has Just Been Submitted by the Industry to the Interstate Commerce Commission—This Petition Might Also Serve as a “Compendium of Knowledge” in Local or State Controversies in the Future—Many Points Scored—Strong Representations Made

[By Waldon Fawcett

THE DIE IS CAST at last. The “allies” of the brick and tile industry have staked their all, as it were, on a final throw for “just, reasonable and non-discriminatory” rates on brick and clay hollow building tile and it may be said in all candor that if ever a strong plea was made for righteous relief it is to be found in the petition that has just been submitted to the Interstate Commerce Commission. It is a call for help that, by its very insistence and emphasis, is calculated to spur the individual brick and tile manufacturer who must now do his part to back it up by furnishing all the evidence that is asked on the questionnaire now in circulation.

Without for a moment belittling the primary purpose of the petition whereby the brick and tile interests have formally assailed the policy and position of the U. S. Railroad Administration, it is only fair to impress upon the everyday brick and tile man that this masterful array of facts has a significance for him aside from the conviction it is hoped that it will carry at Washington. The fact that this petition represents the fruits of months of work in appraisal of the brick and tile industry and that it presents in compact form such a composite picture of the plight of the industry as has nowhere else been painted, gives to the document a significance that might not at first glance be surmised. In short this petition (supplemented by the evidence that is to come), may well constitute the transportation bible of the brick and other clay products tradesman and any interest in the industry that finds itself in controversy with any State railroad commission or any other local authority cannot do better than reach for this “compendium of knowledge” as a reference reservoir with which to reinforce its arguments.

MAGNITUDE OF INDUSTRY ESTABLISHED

With consistent strategy, the first move in the appeal to the “supreme court of the railroads” for relief from oppressive freight rates has been to establish the magnitude of the industry and the volume of traffic that is subject to inequitable conditions. Estimate has been made that the members of the National Paving Brick Manufacturers Association, the American Face Brick Association and the Hollow Building Tile Association produce, in the aggregate, approximately 15,000,000 tons of face, paving and common building brick and clay hollow building tile per year. Even this formidable showing does not, however, reflect the full scope of the clay industry’s contribution to the railroad

traffic of the country. E. E. Williamson, commerce specialist for the three trade associations above mentioned, after digesting all the latest available figures has come to the conclusion that, counting non-member manufacturers, and putting in intrastate as well as interstate business the railroads move each year a grand total of not less than 30,000,000 tons of brick and clay building tile.

Backing up the figures showing the sheer magnitude of the brick and other clay products, traffic stress is being laid at Washington upon the extent to which the plants in the industry are dependent upon railroad transportation, thanks to the location of the plants with reference to the sources of raw material rather than with reference to the markets for the finished product. The statement has been made so many times that it has become axiomatic that practically the entire output of clay plants must be marketed at some distance from the seat of production. Definite computations in connection with the present agitation for rail rate relief show that 90 per cent. of the output of the plants in the “big three” associations undergo railroad transportation.

It has never been so graphically set forth as in the petition just filed with the Interstate Commerce Commission how the latter-day history of brick rates constitutes a growing grievance to the trade. Prior to the disposition of what are known as the Stowe-Fuller and Metropolitan Paving Brick Co. cases the rates on the various kinds of brick varied. Generally speaking, fire brick had the highest rates, face brick had slightly lower rates, common brick and clay hollow building tile had lower rates than face brick and paving brick had the lowest rate of all. Following the decisions mentioned, the rates were supposed to be made uniform on all kinds of brick, except enameled or glazed, but the carriers accomplished the standardization called for by increasing the rates of the lowest rated brick up to the higher level instead of bringing everything to the erstwhile minimum or even adopting an intermediate plane.

THE FREIGHT RATE INCREASES

Then, in due course, came what is known as the Five Per Cent. Freight Advance Case whereby the carriers were granted a 5 per cent. increase in their rates on brick, a precedent that was generally followed by State Commissions in the regulations of interstate rates. In 1917, as most of our readers have occasion to recall, there came another advance in brick rates and finally on June 25, 1918, the rates were once more boosted by the Director General

of the Railroads under General Order No. 28, which has been a thorn in the side of the industry. The bitterness of the dose was intensified by the circumstance that in this last mentioned adventure brick rates were inflated an average of approximately 60 per cent. and hollow building tile rates 50 per cent., whereas, rates on other commodities and class rates that were scaled up at the same time were advanced generally only 25 per cent. An advance of 40 cents per ton on a class of manufactures that had previously been carried at an average rate of 65 cents per ton was well calculated to provoke such a stiff fight as has ever since been put up by the organized interest in the trade.

Even the business man who has no intimate knowledge of inside conditions in the brick and tile industry will appreciate that the trade has a right to protest merely on the score of the unfair deal given it under General Order No. 28. However, as was forecast in *Brick and Clay Record*, the petition that has just been laid before the Federal censor of railroad rates does not rest its case solely on the prejudicial condition created by the order of last June. It goes behind that with the contention, supported by a forceful array of facts, that the rates on brick and building tile prior to June 1918 were relatively unjust and unreasonable.

POINTS SCORED IN THE PETITION

The everyday clay products manufacturer may find it worth while to tuck away, for use at an opportune time, the facts that have been marshaled to prove that General Order No. 28 was not a first offense but rather was a case of adding insult to injury. Points scored in the petition are that brick is shipped in any kind of a car that can be wheeled into; that it does not injure or dirty the cars; that there is little injury to brick while in the cars and consequently a minimum of claims for loss or damage; and that the bulk of the movement is in the summer months when transportation costs are lowest. On top of that are the considerations that there is no assembling of cars at brick plants; no expedited service and no transit or reconsignment privileges. In short, brick and tile requires but a minimum of railroad freight service and the traffic, though loading 35 tons to the car, is usually loaded and unloaded the day when placed, thereby eliminating detention and demurrage.

It is brought to the attention of the Interstate Commerce Commission that altho the average value of brick, per carload, is one of the lowest known to commerce and altho the railroads are called upon to make virtually no outlay as recompense to shippers for loss and damage, brick was, prior to June 1918, paying far more per car per mile than the average of all commodities carried by rail. Particular stress is laid upon the disadvantageous position which brick, even at that time, occupied with relation to the commodities with which it comes in immediate competition, namely with lumber, cement, asphaltum, etc. Actual comparison of figures covering hauls in Illinois and Indiana in 1917 show, for example, car mile earnings in cents of 36.75 for brick set opposite 27.88 for lime and cement on virtually the same length of haul.

The protest just lodged with the highest authority at Washington frankly admits what has been widely suspected in the industry, namely that the present general structure of brick rates results in discrimination as between localities, placing at a disadvantage certain plants or groups of plants and giving undue preference to other plants or groups in other localities. It is expected that this phase of the situation can be made more clear as a result of the first-hand evidence to be collected from manufacturers this summer.

STRONGEST POSSIBLE REPRESENTATION MADE

No man in the industry need have any misgivings that the plight of the trade has not been strongly represented to

the official body that affords a last hope for relief. The Commerce Commission is told, straight from the shoulder, that an industry representing an investment of \$100,000,000 and employing 75,000 men is in great distress and "faces financial ruin" if relief cannot be obtained from the onerous burden of freight rates that has caused innumerable building and paving projects to be abandoned or deferred. It requires ten tons of brick to build as much wall as one ton of lumber; six tons of brick to balance one ton of cement in wall construction; twenty tons of brick to face as much wall as a ton of stucco. In paving, it requires 13.2 tons of brick to one ton of asphalt; 440 tons of brick as against a ton of macadam; 2.66 tons of brick in lieu of one ton of creosote blocks. Well, may the Solomon of railroad rate inequalities be asked what chance there is for brick and hollow tile unless there be relief from the pressure that has literally strangled this traffic?



Paving Brick Men to Meet with A. C. S.

Further developments in regard to the summer meeting of the American Ceramic Society, which will take place during the week of August 4, have been announced at the headquarters of the National Paving Brick Manufacturers Association by Will P. Blair, vice-president.

Members will assemble at Buffalo and after visiting Niagara Falls will leave Buffalo on the 6th on the night boat for Cleveland. Eastern members of the National Paving Brick Manufacturers Association will meet at Buffalo on the 6th and will accompany delegates of the American Ceramic Society thru the remainder of their program.

The details of the meeting are being planned by Robert D. Landrum, of the Harshaw-Fuller-Goodwin Co., Cleveland. Besides the regular business, there will be a series of inspection trips to various plants in Cleveland and nearby cities.



N. P. B. M. A. Starts Advertising Campaign For Better Highways

Completion of plans for a national campaign designed to stabilize the market for paving brick, and also to arouse public opinion to the need for better paved city streets and country highways, were completed recently by the National Paving Brick Manufacturers Association, with headquarters in Cleveland, Ohio. The advertising campaign that will stimulate the public interest in this vital factor that confronts the country today will be conducted in such a manner as to reach the thinking people in the most forceful manner. It will be conducted thru a list of selected trade journals and high class magazines with wide circulation.

Primarily the aim will be to advertise paving brick as the ideal road surfacing material. This activity will be coordinated by reaching the general public, and particularly the taxpayer, and telling him of the vital need for quality brick pavement, and by arousing the interest of engineers and public officials, and educating them in the way of service in brick pavements.

The campaign will start July 1, and will be developed as time goes on.

A feature of the advertising campaign hitherto not announced will be the part that "Dependable Highways," the official organ of the National Paving Brick Manufacturers Association, will have in the movement. For several years this publication has appeared monthly. Besides carrying the message of good brick pavements to all manner of public and private persons interested in highway development, it

has carried a substantial array of advertising from different paving brick, machinery and other manufacturing and producing interests identified with the industry. Special articles, capably illustrated, have done much, thru this medium, to arouse public interest.

"Dependable Highways," instead of appearing each month, as heretofore, will be used as a means of answering inquiries and questions developing out of the national advertising. It will appear as often as necessary to aid the advertising move-

ment, and its editorial contents will be governed largely by the advertising campaign. No advertising henceforth will be carried in "Dependable Highways." The fixed mailing list will be retained, and copies of the paper first will be sent to new names furnished by the territorial association offices. Other copies will be mailed to persons who request them directly, and to those who seek copies thru the territorial associations.

The campaign will be conducted by Crosby—Chicago.



PREDICT COMPLICATIONS *in* COAL SITUATION —AUTHORITIES ADVISE BUYING NOW

MEN CONNECTED in any way with the fuel industry make the prediction that the nation faces an inevitable scarcity of coal and higher prices this fall. They even go further and state that it is very likely the coal shortage will develop into the seriousness of an old-fashioned famine. Four different Government bureaus have issued warnings to the public.

We quote from Dr. Garfield of the United States Fuel Administration who has said:

"Buy now—in August or the autumn it will be too late. A big coal shortage is coming. Thousands of miners are going back to Europe. Coal production has fallen off considerably and a shortage of many million tons looks probable. My advice is to buy now while you can get a selection and delivery.

"I feel bound to say that, as I see the situation we are likely to experience a coal famine in the Fall."

The railroad administration thru Director-General Hines, sees an impending danger because cars in which to haul coal will not be available. The Geological Survey predicts a serious shortage because, it says, the nation already is short 48,000,000 tons in comparison with the preceding calendar year.

Mr. Wilson of the department of labor says: "Those who postpone buying coal in the hope of lower prices are speculating in the future misfortune of the Nation.

"Nothing in the labor situation warrants anyone expecting materially lower cost of commodities in general and coal in particular. Wages will not be less for several reasons. We are facing a serious shortage of labor as soon as we approach normal industrial activity."

The above views are all from unbiased authorities who are sufficiently informed on the situation to make their statements worthy of much study and consideration. Looking at the matter as we see it, it seems quite likely that the shortage in coal supply predicted will occur if manufacturers do not get busy and commence buying now.

Now that peace is signed, things are going to start up with greater acceleration and it is the party who takes advantage of the present conditions right now who will reap the harvest. Automobile production is going to come back into its own. The building material industry is going to make up for lost time. Sewing machines, lawn mowers, carpet sweepers, kitchen utensils, stoves, phonographs, pianos and the thousand and one other commodities restricted in production, are going to be produced in unprecedented quantities—not only for domestic use, but for all the world.

All of this means transportation and the employment of railroad cars. And so Mr. Hines says there will be a division of cars this fall. Coal must take its chance. Coal can be hauled now—in summer months. There is hardly

any question any more as to the prospects in the building industry—it is going to be good. No manufacturer will want his capacity cut down or interrupted because of inability to obtain a sufficient quantity of coal. It seems from this standpoint that it is a quite safe proposition to begin to store coal for the coming fall and winter.

COAL SALES CONSTANTLY INCREASING

The resumption of manufacturing activity in the industries such as are mentioned above is already taking hold and its effects are being felt in the coal trade. Coal sales are constantly increasing and some operators even report that they are sold on some sizes as far as January.

Besides the predicted shortage, higher prices are also looked for by a number of authorities, such as Secretary Wilson, Mr. Babson, Irving Fisher, J. Ogden Armour and Judge Gary. They say that present prices are natural and are here to stay. They base their reasoning upon the increased cost of production and increased taxation. Seventy-five per cent. of production cost is labor's wages. Labor's compensation is reflected in the price of its products. Labor is working on a war level basis and won't consent to a reduction of wages. And it is hardly likely that taxes will be reduced for quite a number of years to come.

Owing to the great exodus of foreigners to their native countries, among whom many are coal miners, there is going to be a serious shortage of labor in the near future, which promises to complicate matters still more.

There is also another phase in the situation which is disturbing, to say the least. The present agreement between the coal operators and the miners, which was arranged by the Government, expires thirty days after the signing of peace. Up to the time of the writing of this article there has been no discussion between the two sides, as to wages and hours and other points in the labor situation. This point alone should be given much thought.

A study of all the conditions which might affect the coal situation leads us to believe that it is advisable that manufacturers seriously consider the question of storing coal now at prices which are not likely to be lowered for a long time and avoid any complications that may result from the causes given above.



Mid-summer meeting of the advisory committee of the National Paving Brick Manufacturers Association will be held early in August, at Columbus, Ohio.



According to reports from Milwaukee, Wis., brick and clay products are in very good demand. The same is true of all building materials.

WHAT *to* CONSIDER *in the* DESIGN *and* LAYOUT *of* PERIODIC KILNS

Containing Information on Factors in Kiln Design and Arrangement That Has Never Been Published in Previous Manuscripts on This Very Important Subject

By T. W. Garve, Cr. E.

KILNS readily fall into two classes: (1) Single kilns, fired periodically. (2) Continuous kilns.

A connecting link between these two general types is a series of periodic kilns connected by a system of flues which in a measure introduce the principles of economizer kilns.

The relative fuel consumption in the two classes and the intermediate will be as follows: Periodic kilns—three; connected periodic kilns—two; and continuous kilns—one. While mainly for this reason the continuous kiln is fast coming into prominence, the predominating type of kiln in this country is still the periodic kiln.

The continuous kiln represents a large initial investment and it will naturally take some time before smaller plants will adopt it. For certain wares, such as refractories, it will come slowly, and for other wares such as sewer pipe or other glazed wares it will perhaps never replace the periodic down-draft kiln. Besides we cannot replace all the successful periodic kilns in this country all at once with continuous kilns, and where a beginning has been made with the periodic type, their use will be continued for the present. The continuous kiln is developing rapidly but it has not attained the results in quality of ware in some cases that are obtainable from the down-draft kiln.

The periodic kilns have two chief representatives: (a) The up-draft kiln; and (b) the down-draft kiln. There is also an up-and-down-draft kiln which we do not meet very often. As far as fuel alone is concerned we can burn cheaper in an up-draft than in a down-draft kiln and indeed the ware shows it.

The stations on

the road of progress in our brick or clay industry may be marked as: Scove kiln, up-draft kiln, (horizontal draft kiln), down-draft kiln, continuous kiln. It is a straight road forward, a sound and logical route. It was the strife for quality that led to the third and fourth station, and after quality was well established we could begin to travel to the fifth station, meaning economy. But we have to travel intelligently and cautiously, observing and studying, if we wish to reach economy without losing quality.

There are two kinds of down-draft kilns: (a) The round kiln; and (b) The rectangular kiln. The writer must admit that he always has had a greater liking for the round kiln, tho he cannot fully account for it. We all have our certain likes and dislikes without being able to account for them wholly.

A round kiln will give a good distribution of heat in so far as furnaces and kiln area are concerned since every furnace is located at the base of a triangle, the apex being in the center of the kiln. The farther away we move from the furnace or base the more rapidly the heat decreases and correspondingly the area.

A round kiln does not require the buckstays and tie rods of a rectangular kiln but instead is perfectly satisfied with some bandage. A barrel is always comparatively stronger than a box.

We have been taught in mathematics that a circle is the smallest or shortest circumference possible to enclose a given area or in other words, given a certain length and drawing up a number of diagrams with this length as circumference or boundary, the one in shape of a circle will enclose the largest

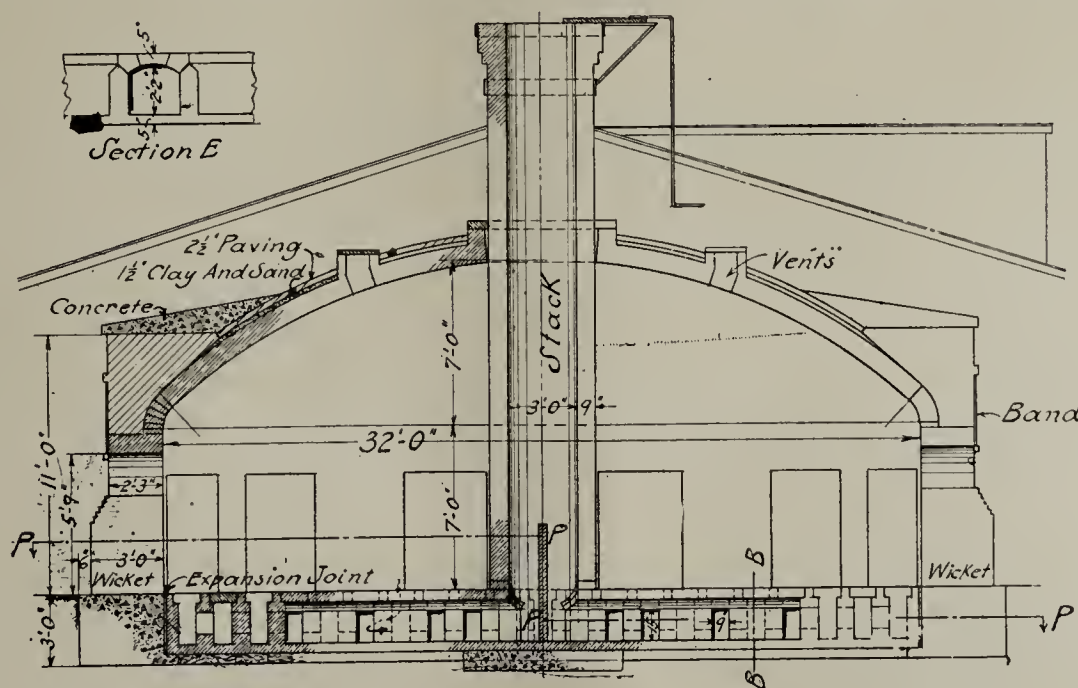


Fig. 1. Section AA (and BB in the Upper Left Hand Corner) of a Thirty-Two Foot, Center Stack, Round Kiln.

area. Hence the round kiln should be more economical in regard to brickwork required and in regard to radiation loss. We shall see a little later how far our figures will bear out this statement.

later stages of the burn and the designer must allow for ample circulation above and below the floor and place the furnaces at such a level that their hottest part will be nearest to the kiln bottom. For this reason we find inclined bar furnaces higher in the kiln wall than furnaces with level grate bars.

The simplest bottom which will answer all requirements will naturally be the best, and it is often the mistake of a designer to carry theoretical niceties too far and overlook or underestimate practical points, and we consider it essential that a kiln designer should have practical experience as a burner.

The output largely determines the size of a kiln and we might choose between twenty-four feet and forty-four feet inside diameter. Karzen in a recent article in *Brick and Clay Record* gives the smaller or average sized kiln the preference, and a 32-foot diameter kiln is indeed a recommendable size.

However the clay and especially the brick industry is getting centralized and the plants are getting bigger and bigger; besides we are considering fuel economy more than ever before which will also speak for larger kilns. If there are constructive difficulties to be met within the larger kilns, we must try to overcome them.

These difficulties and other questions will be considered in connection with the description of the accompanying illustration. In Fig. 1 and 2, we have an elevation and a plan for a 32 foot center stack

kiln which is noticeable for its very shallow bottom. A shallow bottom is occasionally essential and frequently desirable. We can build such a kiln where the ground water level is high, and there is no reason in

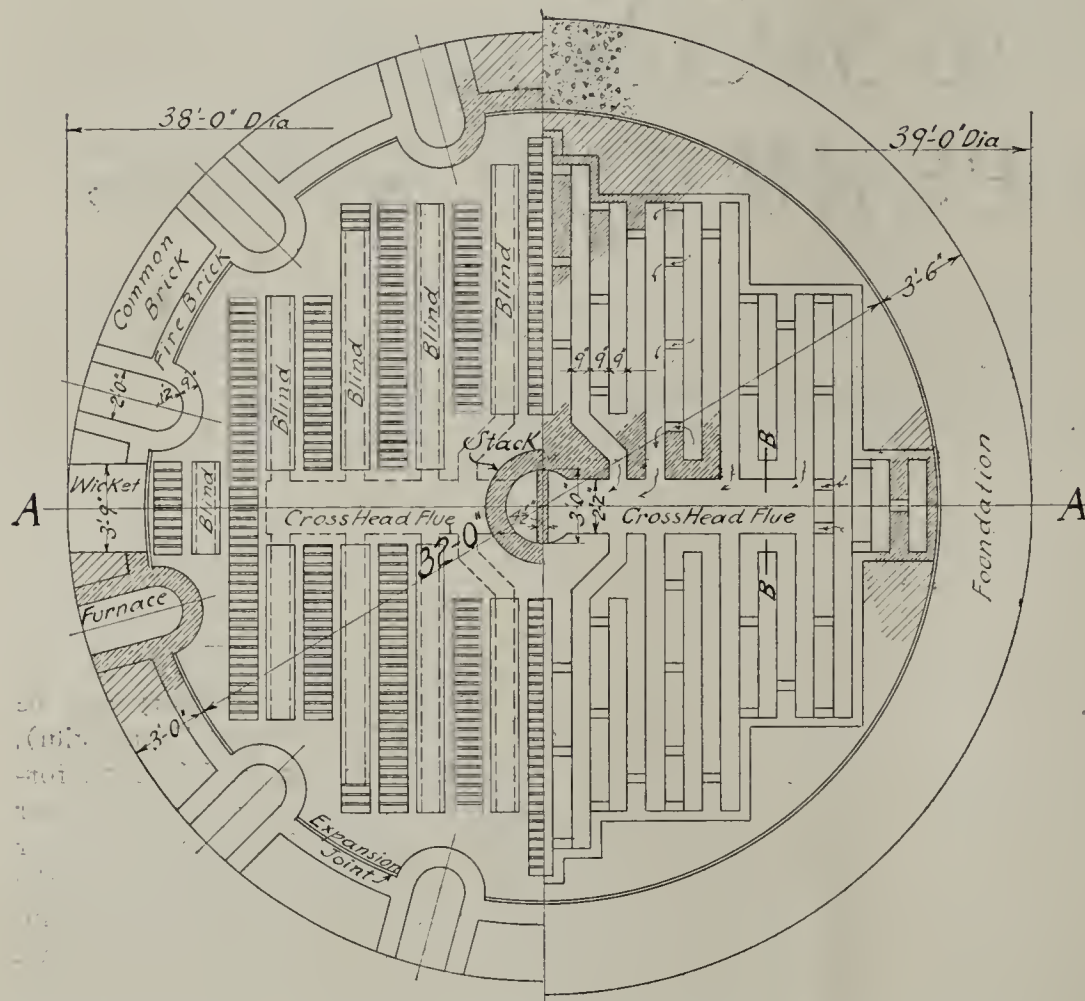


Fig. 2. Section PP of the Same Kiln Shown in Fig. 1. This Kiln is Noted for its Very Shallow Bottom.

The most interesting part of a round kiln however is its bottom. There are many ways of constructing a bottom but not so very many possible to arrive at a proper type of bottom by knowing fully all conditions as to ware, output, quality, fuel, labor, locality, etc.

It is comparatively simple to design a good bottom for a small kiln, but the larger the kiln the more difficult it will become to find a solution that will answer the essential requirements which are a regular distribution of heat thru-out the kiln and a hot floor.

Due to the rising heat from the bags, first meeting and overturning below the crown, the top of a down-draft kiln will always be hotter than the bottom and the designer and burner must each assist the other in reducing the difference in heat between top and bottom to the minimum limit. The burner does it by proper firing and heat soaking during the

the world why it should not be a good kiln for any other case without such danger. The heat of a kiln will penetrate deep into the ground, of course more so on a continuous kiln where it may reach a depth of thirty feet. The shorter the distance of heat penetration down from the floor, the less fuel we are wasting, especially on a periodic kiln where this heating process is being started over and over again.

Besides we are getting the heat circulation closer to the kiln floor where the ware will benefit instead of underground waters.

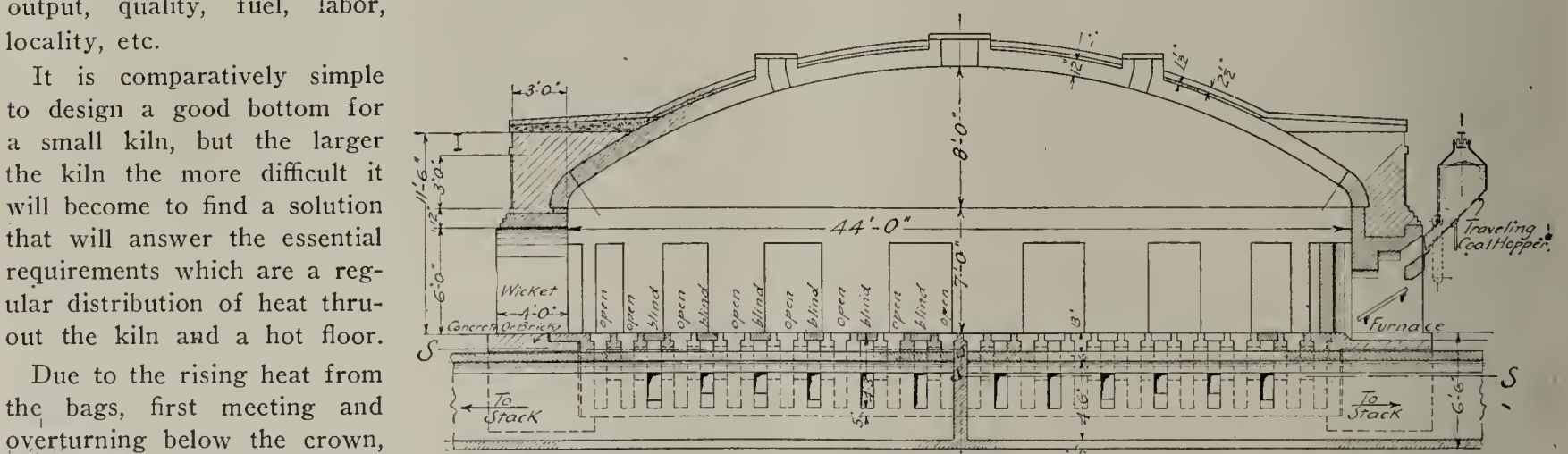


Fig. 4. A Sectional Elevation Along Center Line of a Large Kiln With Two Stacks. Note the Arrangement of the Traveling Coal Hopper.

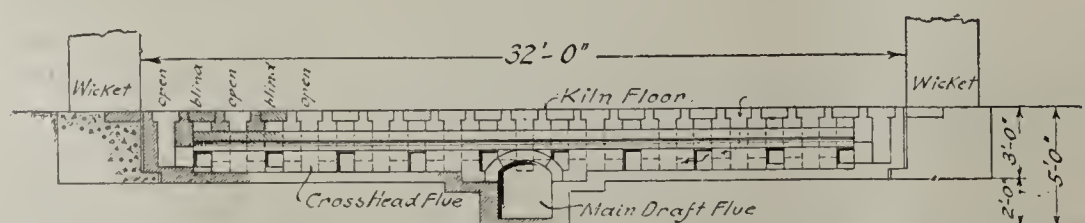


Fig. 3. This is a Sectional Elevation Showing How a Main Draft Flue May Be Introduced in Cases Where the Center Stack is Objectionable.

Furthermore it requires less time to build such a kiln and it takes less material to construct it. It was economy we were after without losing quality.

Where the center stack is objectionable, as it is for setting on a small kiln, and where additional depth can be had, we can easily modify the bottom to a so-called cross head flue bottom by running the collecting flue thru in the center and introducing some-

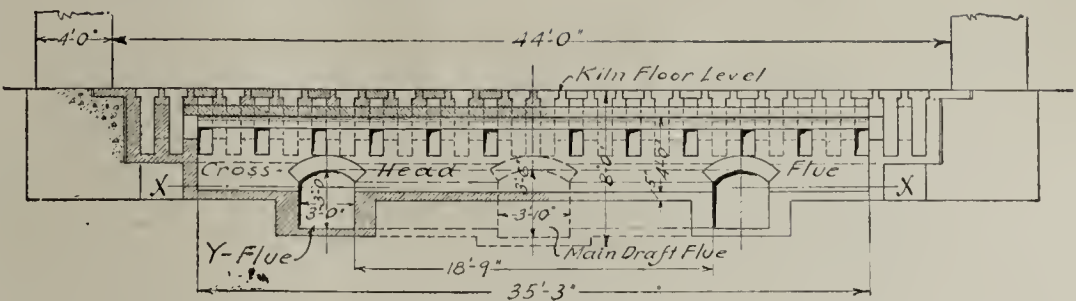


Fig. 6. This is a Sectional Elevation Along the Center Line of the Same Kiln as Figs. 4 and 5 Except That it Has One Main Draft Flue and One Outside Stack.

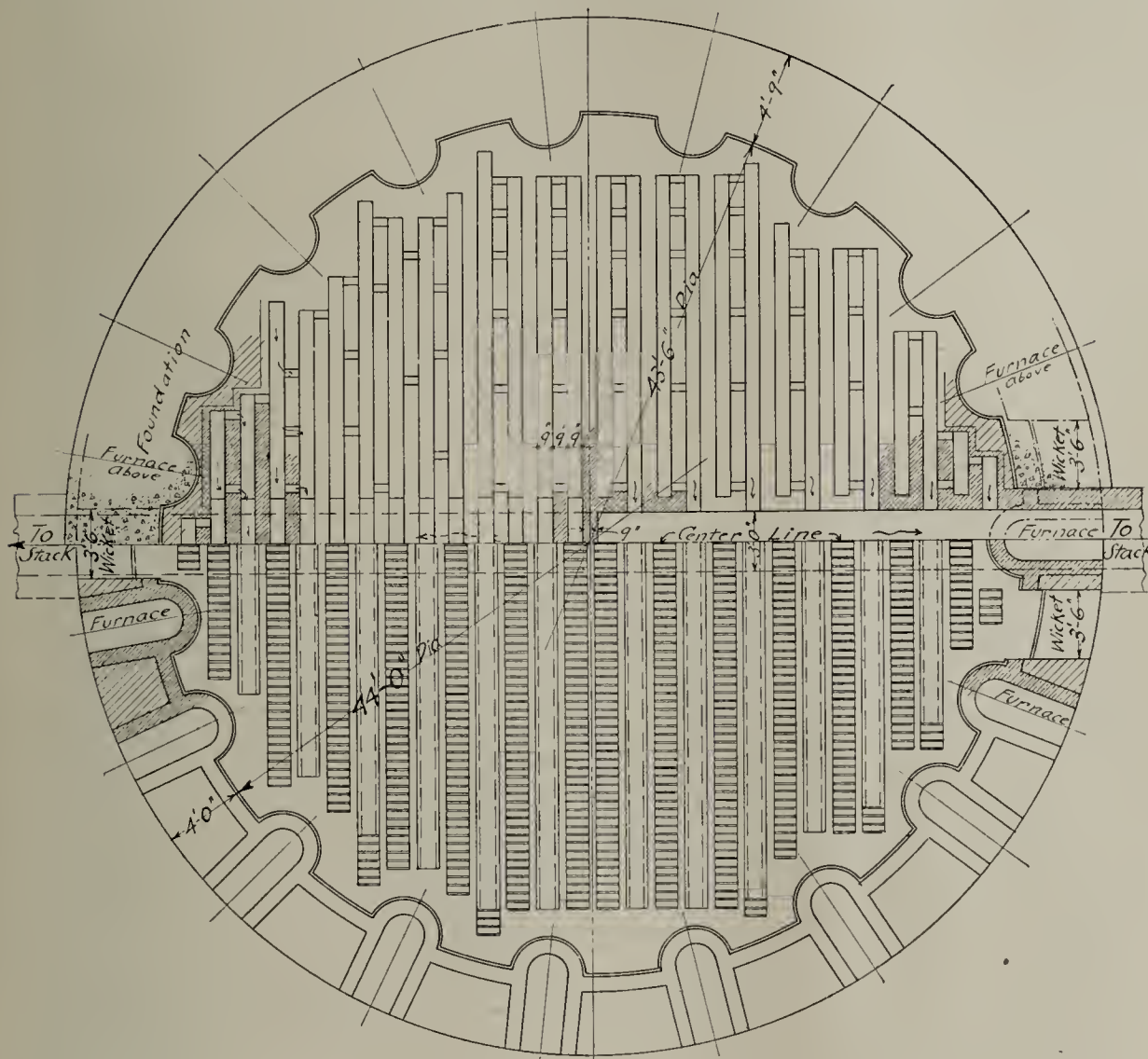


Fig. 5. Sectional Plan SS of the Same Large Kiln Represented in Fig. 4. A Double Wicket is Built on the Intake Side of the Kiln to Facilitate Setting.

what below in the center, the main draft flue leading off to one side as shown in Fig. 3. The rest of the kiln is the same as shown in Fig. 1 and 2 with the additional exception only that the blind and open underflow flues are running also thru the kiln center. Here, with the cross head flue and outside stack type, we have a total depth of five feet against three feet of the center stack type.

The setting determines the height of the kiln in the clear and will be in the neighborhood of ten feet. We should set the ware in the crown space to the limit since here is the best or hottest part of the kiln. There is a difference of at least one cone in a well insulated kiln between the top of the setting and the bottom of the crown.

FIGURING THE SIZE OF FLUES IN BOTTOMS

Let us now roughly check over the size of the ducts and outlets in the kiln bottom. The size of the final kiln outlet or the size of the stack area is determined by the amount and speed of gases passing. Lovejoy gives a convenient rule of thumb that this area should be in square inches whatever the kiln measures in square feet setting space. Our center stack shows a diameter of 36

inches and this could perhaps be a little less, except for the restricting tongue at the bottom in the center of the stack. It is advisable to make the kiln flues larger than the stack flue to provide for restrictions in consequence of distortion by expansion, accumulations of sand and bats.

The openings of the blind flues into the cross head flue (See Fig. 1) measure 9 in. by 15 in. each, and there are sixteen of them, eight on each side of the flue. A 9 in. by 15 in. opening is equivalent to about a 12 in. diameter pipe

$$d = \sqrt[5]{\frac{32 a^2 b^3}{\pi^2 (a + b)}}$$

and according to the equalization table sixteen 12 in. pipes are equivalent to one .36 in. pipe in carrying capacity which conforms with our stack. Checking over the ports in the feather walls between the open and blind underflow flues (which should not reach clear to the bottom on account of the accumulation of sand, etc.) there are seventy-eight 5 in. by 10 in. ports. One 5 in. by 10 in. rectangular opening is equivalent to a 7 in. circle, and seventy-eight 7 in. pipes are equivalent to one 40 in. pipe.

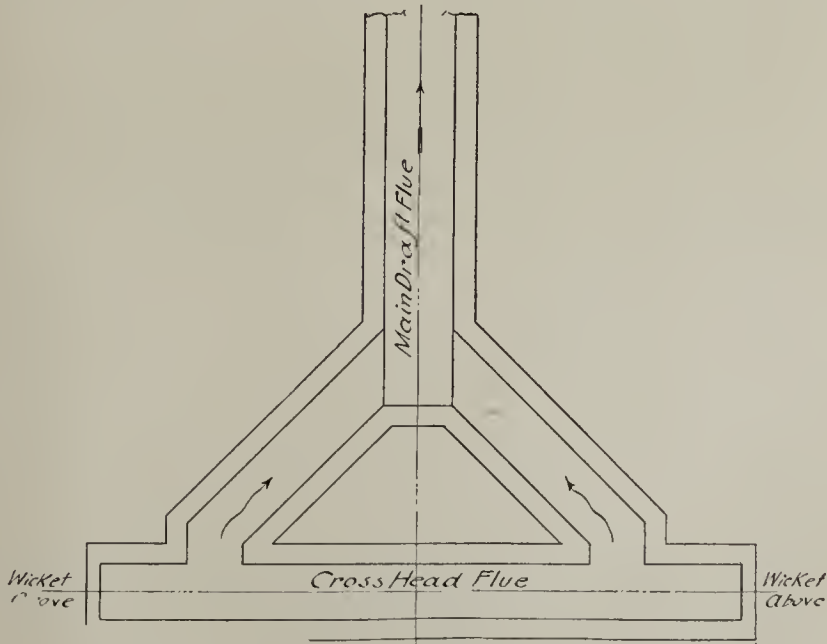


Fig. 7. Section XX of Same Kiln Shown in Preceding Drawing and Showing How the Main Draft Flue Draws from a "Y" Close to the Wickets.

Hence we are safe on this, but we have to be on account of the many right angle turns at the ports.

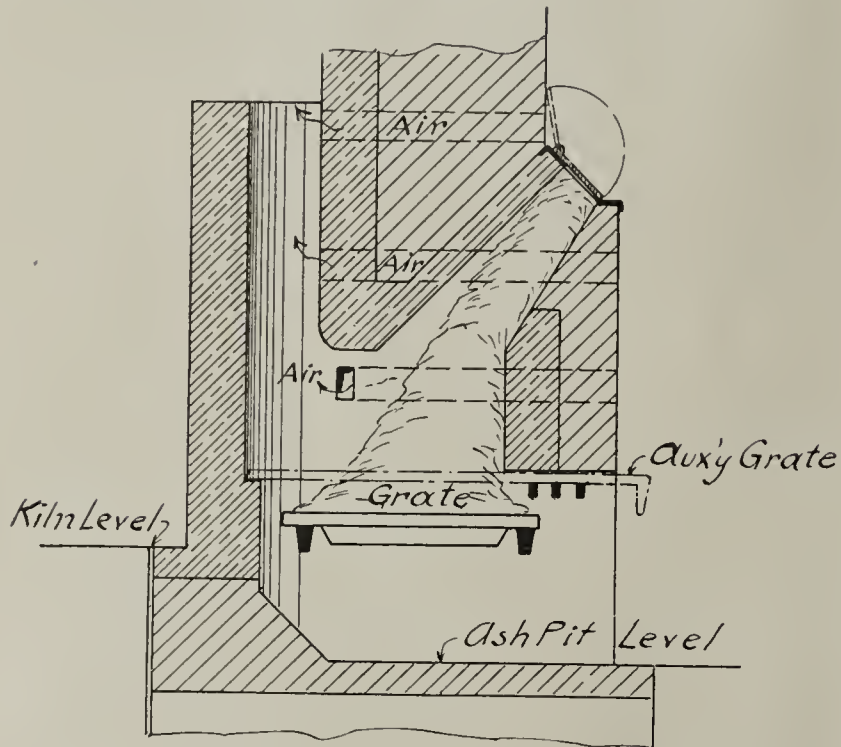


Fig. 8. A Semi-Gas Producer Type of Furnace Which May Be Used as a Common Grate Bar Furnace if the Ware Requires Such Operation.

In regard to the floor slots, there are 464 1 in. by 9 in. slots. One 1 in. by 9 in. slot is equivalent to about a 3 in. pipe. 464 three-inch pipes are equivalent to a 35 in diameter pipe which would seem to be a little shy, but is sufficient since we wish to check the gases at the floor where they must circulate in seeking their outlets thus giving up their heat units to the ware.

HOW A LARGE KILN MAY BE BUILT

In Fig. 4 and 5 we have a kiln of 44 feet inside diameter. This kiln bottom lacks the symmetry of the usual round kiln because of the double wicket on one side and

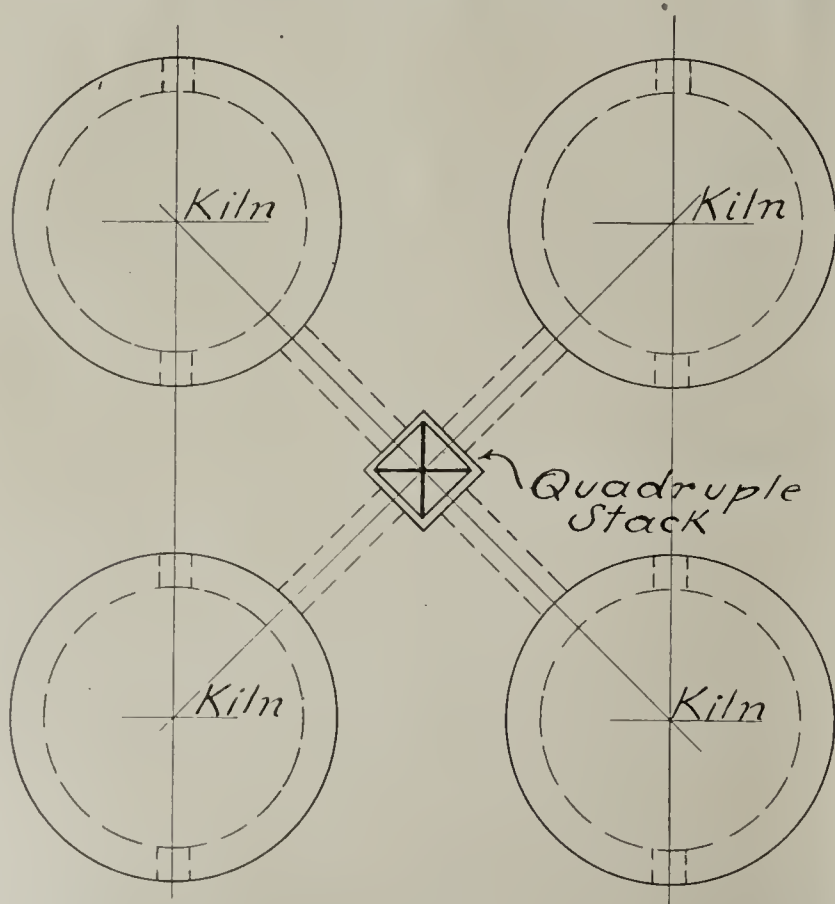


Fig. 9. Showing a Yard Arrangement for Round Down-Draft Kilns Using One Quadruple Stack for Four Kilns.

the odd number of furnaces. A serious objection to round kilns is the necessarily narrow wicket which in set-

ting ware requires that the empty car be removed before the loaded car can be brought in, thus retarding the setting. The double wicket on the intake side removes the objection and such double wickets are practical in kilns as large as 40 feet in diameter. There is a furnace on each side of the two wickets besides one between them and there should be no cold spots in consequence of the wickets. In Fig. 6 and 7 we have the same kiln with one main draft flue and one outside stack, the main draft flue drawing from a Y close to the wickets. The bottom is otherwise of the cross head flue type.

The crown is built of 12 in. brick instead of 9 in. and there is no reason why it should not stand up well under proper care as has been shown on other kilns of practically this same size.

Such a large kiln can be built to advantage with a center stack since here the stack would not interfere much with the inside tracks for setting.

The coal is delivered to the furnaces by a traveling hopper, suspended from overhead. To avoid too frequent charges it might be advisable to build furnaces of a semi-

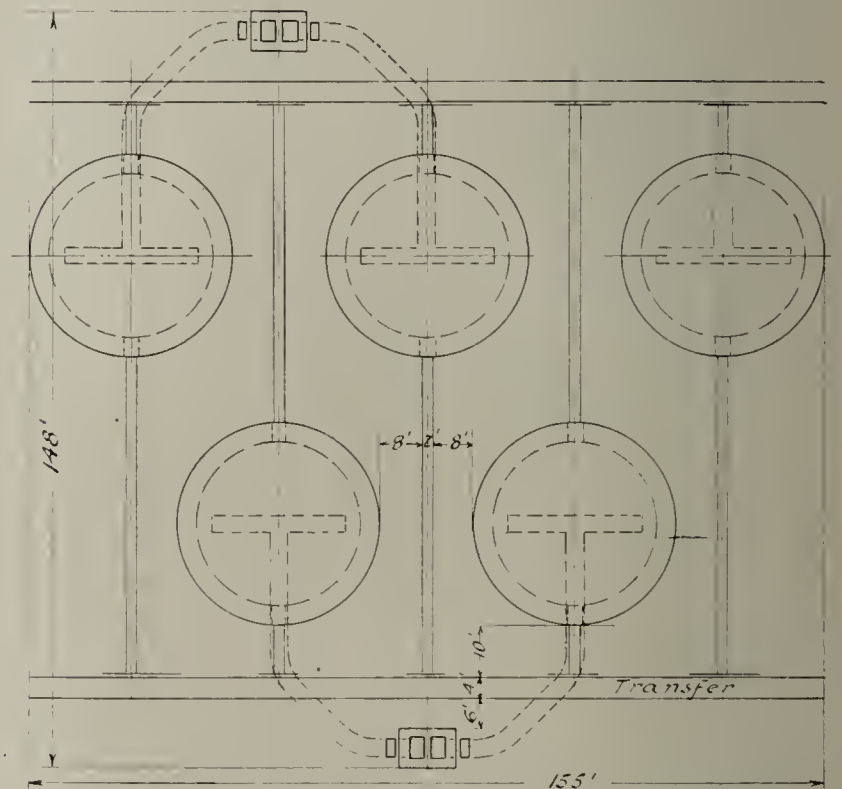


Fig. 10. All Arrangement for Kilns Using Double Stacks. The Wickets Are Turned Ninety Degrees.

producer type as per Fig. 8 which at any time may be operated as a common grate bar furnace if the ware requires such operation. There is provision made for secondary air behind the fire and for an auxiliary grate for removing and cleaning the permanent grate below.

COAL HANDLING SYSTEM RECOMMENDED

We cannot recommend too highly the installation of some form of coal handling system. Other industries have taken advantage of our modern and highly developed coal handling and conveying systems while clay working plants should have been the first to install such systems. They mean better burns, saving of labor, yard cleanliness, proper storage, and an excellent means of checking the amount of coal used for each burn. Every average sized brick plant should either be in possession of a producer gas plant or a coal handling system.

The yard arrangement is frequently an important factor in selecting a certain type of kiln. Even the type of kiln bottom is to a certain extent influenced by the yard arrangement by its relation to stack and wickets. Rectangular kilns will lend themselves better to a con-

venient yard arrangement and occupy less space than round kilns.

In the Figs. 9, 10, 11 and 12 we have sketched four different yard arrangements with quadruple, double, and single stacks, the latter two or three arrangements being adaptable for cross head flue bottoms as per Fig. 2 and 3.

In Figs. 13 and 14 we have a plan and elevation of a yard arrangement using our 44-foot diameter kiln with two single stacks. We have also indicated a coaling system. In Fig. 15 we have the same kiln with the cross head flue as described with a single outside stack for each kiln. We have also indicated here the waste heat ducts leading from the kilns to the dryer. Note on all these arrangements from Fig. 13 to 15 the double tracks towards the dryer for quicker filling.

HOW TO CONSTRUCT RETAINING WALLS

In Fig. 16 and 17 we have before us a rectangular kiln which may be of any length. We have shown retaining walls at the ends instead of buckstays and tie rods. We do not necessarily recommend this, but wish to point out that, whenever this is being done, the end walls

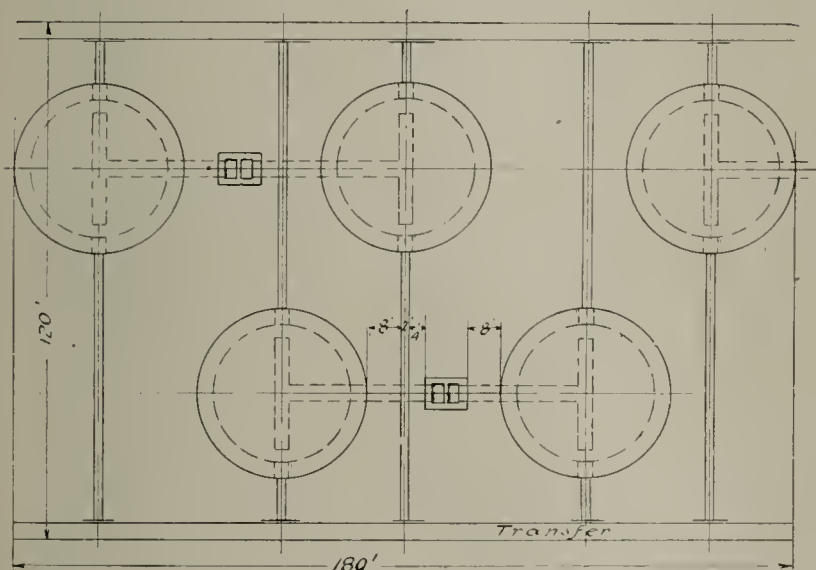


Fig. 11. The Arrangement of the Kilns in This Drawing Calls for Double Stacks and the Wickets Not Turned.

should be constructed as actual retaining walls with brick right-angle to the batter, pressing against a proper skew of a strong concrete foundation. If merely laid up horizontally, the few hundred additional brick will be pushed out easily. It would have the advantage of keeping the ends of the kiln hot and eliminating the long tie rods along the kiln, but requires a lot of brick and occupies much yard space.

Other features of this kiln are large bags with furnaces far inside the kiln to reduce radiation loss, high side walls and low crown for shortening the projecting I-beams above the walls to prevent their buckling, a low spring of crown to decrease the difference of temperature between top and bottom, and large collecting flues close to the wall stacks to give a hot floor and a strong steady draft.

Figuring 14 brick per cubic foot of setting space, such a rectangular kiln 48 feet long will be equivalent to a 32 foot diameter kiln, holding about 94,000 brick, and 100 feet long will be equivalent to a 44 foot diameter kiln, holding about 196,000 brick.

As stated, rectangular kilns require less yard space, and we see in Fig. 18 that an area of 87 feet by 202 feet—equal to 17,574 sq. ft.—would be required for five small kilns and 114 feet by 202 feet—equal to 23,028 sq. ft.—for five large kilns. With the small round kilns in Fig. 10 we require 22,940 sq. ft., and in Fig. 11 there are 21,600

sq. ft. and in Fig. 12 we have 21,360 sq. ft. Taking the latter or smallest area of 21,360 sq. ft. we have 3,786 sq.

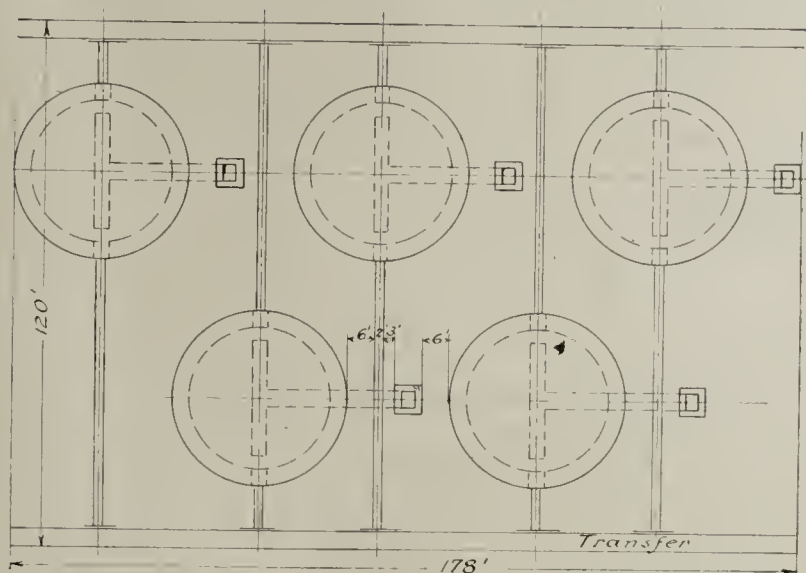


Fig. 12. The Kilns in the Arrangement Shown Above Are Connected With Single Stacks.

ft. in excess of the area required for the small rectangular kilns.

On the large kilns shown in Fig. 13 we have 35,552 sq. ft. and in Fig. 15 there are 37,500 sq. ft. against 23,028 sq. ft. of the larger rectangular kilns.

In Fig. 19 we have shown superimposed three diagrams having the same area. While it is not possible to make a square exactly equal to a circle we can approximate it by making the ratio 9 to 8. The diameter of the circle measures 9 in., the size of the square is 8 by 8, and that of the rectangle 16 to 4. The following table will give the relative lengths of the boundaries these diagrams, that of the rectangle being 25 per cent. longer than the circumference of the circle.

	Areas	Boundaries	Relative Ratio of Boundaries
Circle	63.4	28.3	1
Square	64	32	1.14
Rectangle	64	40	1.25

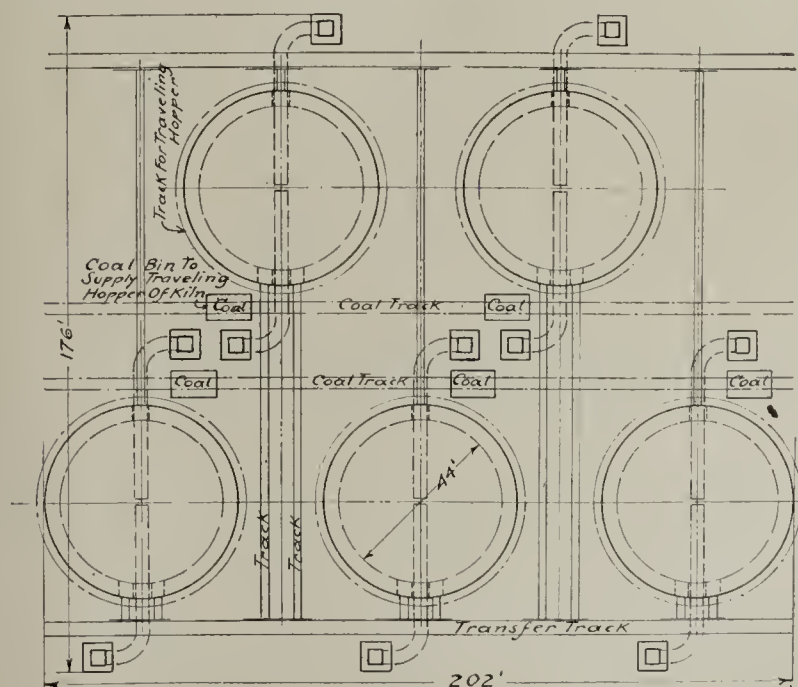


Fig. 13. Plan of Yard Arrangement Using Forty-four Foot Kilns With Two Single Stacks. The Large Kilns Are Fed By Double Tracks.

Assuming these diagrams to be the plans of the kilns, and assuming the heights to be the same, the boundaries become the relative radiating surfaces of the

vertical walls of the kiln and the areas are the relative crown surfaces, and thus we see from the following table that the rectangular kiln has about 14 per cent. more radiating surface than the round kiln.

	Area of sides	Relative ratio of radiating surface
Circle	91.7	1
Square	96	1.05
Rectangle	104	1.14

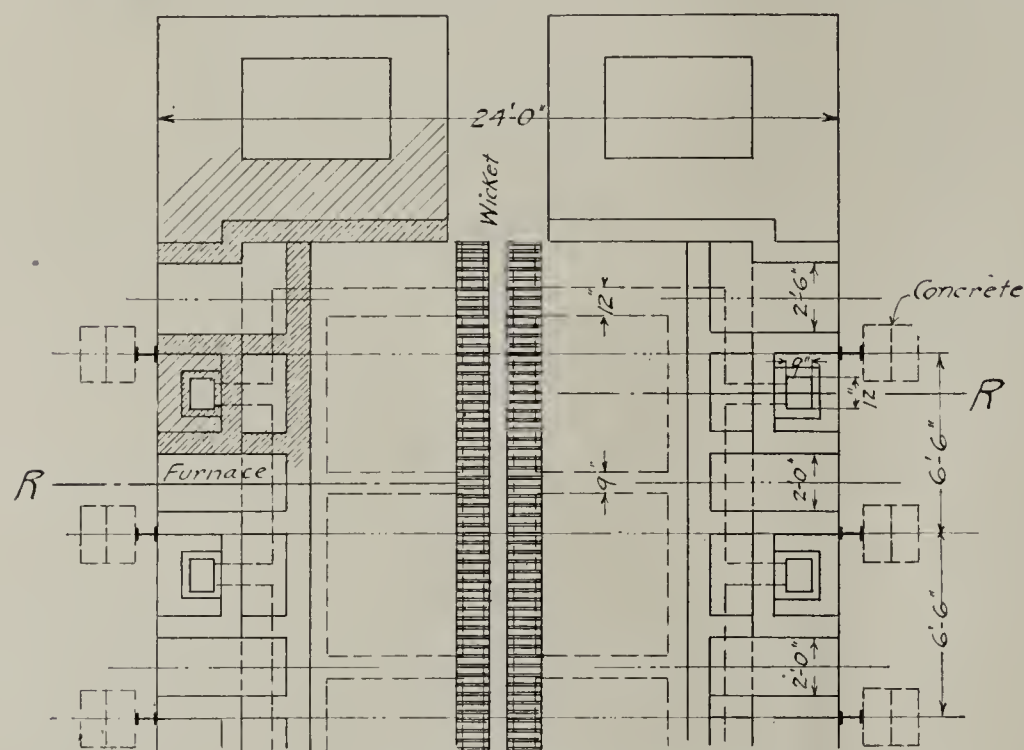


Fig. 17. Plan View of Rectangular Kiln, Giving Construction Details and Dimensions.

Assuming that 70 tons of coal are required for the small round kiln and assuming 50 per cent. radiation loss, we are losing 35 tons in the round kiln, against 40 tons in the rectangular kiln, hence a loss of 5 tons of coal for every burn in the rectangular kiln over the round kiln.

AMOUNT OF MATERIAL REQUIRED FOR KILNS

In the following we wish to give the amount of material required for our kilns. While there are No. 1 and No. 2 fire brick to be used, we have classed them all simply as fire brick, tho there is a difference in cost. We have fig-

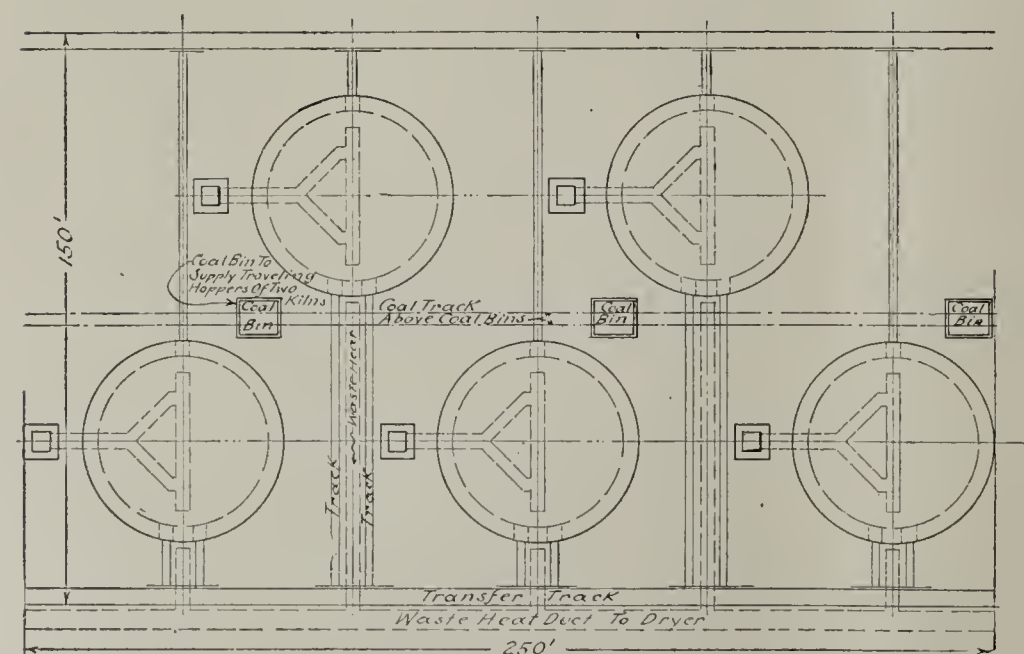


Fig. 15. An Arrangement of Kilns With Single Stacks and Also Showing Waste Heat Flue and Coal Tracks.

ured all fire brick from the furnaces to the stacks which is to come in contact with the gases, tho in many cases, for low temperatures, a hard burned common brick may

answer for all the lower flues. What we are after here most are comparative figures and it does not matter so much what we assume as long as we are doing the same in all cases.

The 32-foot diameter kiln requires the following material: 133 cu. yd. excavation, 60 cu. yd. concrete, 48,000 common brick, 58,000 fire brick and 4,600 pounds steel.

The short rectangular kiln of the same capacity as the above round kiln with vertical end walls and buck-stays, figures the following material: 140 cu. yd. excavation, 40 cu. yd. concrete, 90,000 common brick, 60,000 fire brick and 13,000 pounds steel. From these figures we find that the rectangular kiln will cost about one-fourth more than the equivalent round kiln.

In regard to the large kilns, the round kiln figures: 530 cu. yd. excavation, 222 cu. yd. concrete, 70,000 common brick, 140,000 fire brick, and 7,000 pounds steel, to which should be added for the outside stack about: 24,000 common brick and 8,000 fire brick.

The long rectangular kiln, of the same capacity as the above round kiln, figures the following amount: 200 cu. yd. excavation, 82 cu. yd. concrete, 200,000 common brick, 120,000 fire brick, and 27,000 pounds steel.

From these figures we find that the rectangular kiln will cost about one-fifth more than the round kiln without the stack. Including the outside stack, however, the round kiln will cost about one-fifth more than the rectangular.

Now assuming the small round kiln to cost \$5,000 the equivalent rectangular kiln will cost

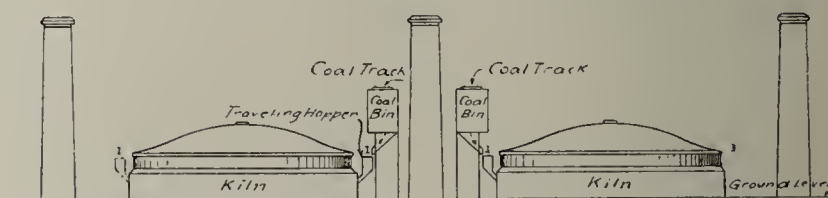


Fig. 14. Elevation of Kiln Arrangement, Plan of Which Was Shown in Previous Illustration.

about \$6,200. Assuming the large round kiln to cost \$12,000 with outside stack, the equivalent rectangular kiln will cost about \$10,000.

BRIEF COMPARISON OF KILNS

In spite of the fact that the bottom of the round kiln is more elaborate than the bottom of a rectangular kiln the cost will be in favor of the round kiln if it is of an average size and if the bottom is shallow. For larger kilns the cost seems to be in favor of the rectangular type, unless we figure here also on a center stack kiln with a shallower bottom than drawn.

With the round kilns there is a greater distance over which we have to move the ware and we have seen they require more yard space than rectangular kilns. Heat distribution, radiation loss and strength we found in favor of the round kiln.

Individually, the round kiln is the better type of the two. Collectively, the rectangular kiln may work out to greater advantage. It depends a good deal upon the capacity of the plant not considering the kind of ware, and it seems that a small plant should consider the round kiln and a large plant the rectangular kiln.

Get Off the Sucker List

Are you on the sucker list?

If you are it is probably because you are *not* a sucker but a patriotic citizen who has known the Liberty Bond to be a good thing.

Get-rich-quick swindles have been the great American sport for years. The sharpers who sell fake stocks saw their game endangered when Uncle Sam started his great Liberty Loan campaigns.

But they are smart—these gentlemen who live by their wits.

Instead of complaining they jumped in and put themselves and all their employes to work trading their fake stuff for Liberty Bonds.

If you have a Liberty Bond or a book of War Savings Stamps you are a "prospect" for fake stock. Your name is probably on the sucker list of the oily tongued sharper because over 20 million patriots bought Liberty Bonds.

You are not to blame for being on the sucker list but it is up to you to get off—away off—that list at your first opportunity.

The American people are paying out some

have bought Liberty Bonds. However, you've made your sacrifice, the war's over now—and really $4\frac{1}{4}$ per cent. is no return at all in peace times—let us exchange your bonds for this exceptional offering positively guaranteed to bring in any where from 10 to 500 per cent. in dividends before the

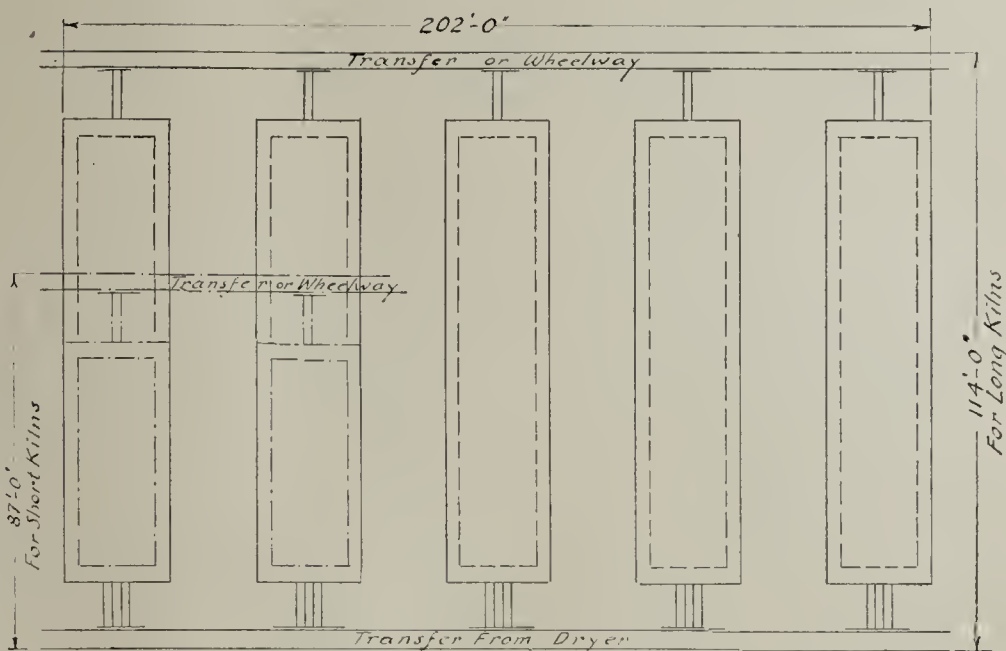


Fig. 18. This Drawing Shows a Kilns Arrangement for Rectangular Kilns.

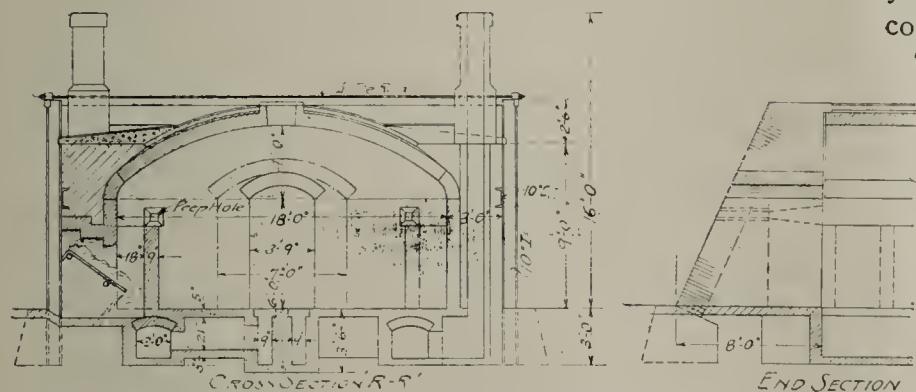


Fig. 16. Rectangular Kiln Which May Be of Any Length and End Section Showing Retaining Walls Which May Be Used Instead of Buckstays and Tie Rods.

Half a Billion Dollars a year to the support of worthless stock schemes. The people reap therefrom \$500,000,000 worth of—thin air.

That is not a wild guess. It is the estimate given by the Capital Issues Committee of the U. S. Treasury. And, the Committee assures us that it is conservative.

Moreover, the Half Billion represents just the cold cash that is turned in EVERY YEAR by otherwise level-headed Americans seeking a milk-and-honey path to quick wealth by the fake stock certificate route. It does not take into account the vast economic loss incident to broken fortunes, impaired effort of discouraged investors and to the diversion from legitimate business enterprise of new productive capital.

The Capital Issues Committee, charged with keeping the nation's investment dollars on a work-or-fight basis during the war, has made a searching inquiry into the devious by-ways of fraudulent stock promotion. Its conclusion is that never perhaps in the history of the country has wild-cat promotion been so flagrant—from coast to coast—as today.

As a result of the government's great war loan campaigns, there are now hundreds of thousands of Americans converted to the idea of saving and investing. With a very great proportion, their investment experience is limited to the good, rock-bottom government war bond.

The Fakir is after them. Thousands of "salesmen" carefully drilled in the gentle art of "selling on the first call" and getting out of town, are abroad.

They will tell you, you were a patriot, a real citizen, to

year's out—as soon as the oil well is sunk, or the mine shaft completed, or the property developed, or the like.

THAT is the brand of the stock swindler today: that he is "willing"—as an accommodation to you, you understand—to "accept" your good Liberty Bonds in "exchange" for his worthless stuff.

Happily there is a Government agency today on the trail of the stock sharp. It is the Federal Trade Commission, empowered by Congress to prevent unfair methods of competition in interstate commerce. The Commission may well be expected to look upon the fleecing of Americans of their Liberty Bonds as decidedly "unfair."

If you own a Liberty Bond you'll doubtless have an early call from one of the pleasant representatives of the sharper outfit. When you do just drop a postal to the Federal Trade Commission at Washington and tell them about that visit and send them the attractive literature that is handed you, together with the name and home address of the "salesman." Or, send it in to this paper and we will forward it to Uncle Sam's men.

It would be interesting to know how much of the \$500,000,000 a year filters out of the clay products industry to the detriment of our banks, our merchants and our legiti-

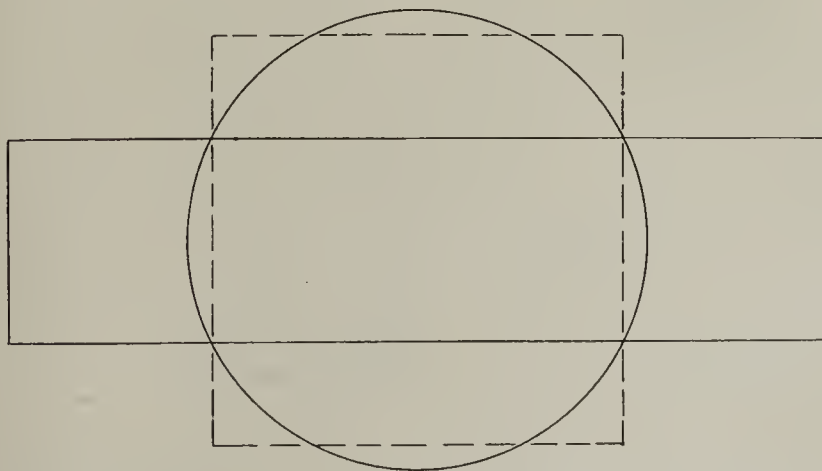


Fig. 19. Here Are Illustrated Three Diagrams Having the Same Area. From This the Comparisons of Their Relative Perimeters Are Easily Made.

mate business development. Also, how many of us are on the Sucker List.

Let's keep our loose change at home!

POSSIBILITIES *in* ADVERTISING

An Address on a Timely, Vitally Interesting Subject, Made by a Representative of the Advertising Firm of N.W. Ayer & Co. of Philadelphia, at the First Annual Meeting of The Common Brick Manufacturers Association of America, La Salle Hotel, Chicago, February 13, 1919

IT IS AN HONOR and a privilege for me to come before you as a representative of advertising—the greatest force in modern business.

In your meeting yesterday, several of your members touched upon the subject of advertising as a means thru which to help you overcome some of your difficulties.

Needless to say, I was greatly pleased to hear these expressions for it is my privilege to represent the oldest and largest institution in the advertising business. Our organization has had a vital part in the great development that has been brought in business thru advertising.

Thru our contact with this subject we have learned to accept public opinion as a real factor in the success of any business or industry. It has been our pleasure to watch many small industries develop into large national and even international institutions thru the power of

continually learning something new about it. Every year brings a new development in the scientific use of advertising.

ADVERTISING NO LONGER A FAKE PROPOSITION

Many of you can remember the day when most advertising was looked upon with suspicion. Today, however, you will all grant, I believe, that the public no longer considers advertising as a fake proposition for it is thru advertising that the public advances its civilization, obtains its comforts of home, selects schools for its children, learns of new developments in manufacturing processes; in fact, advertising today covers practically every phase of modern life and industry.

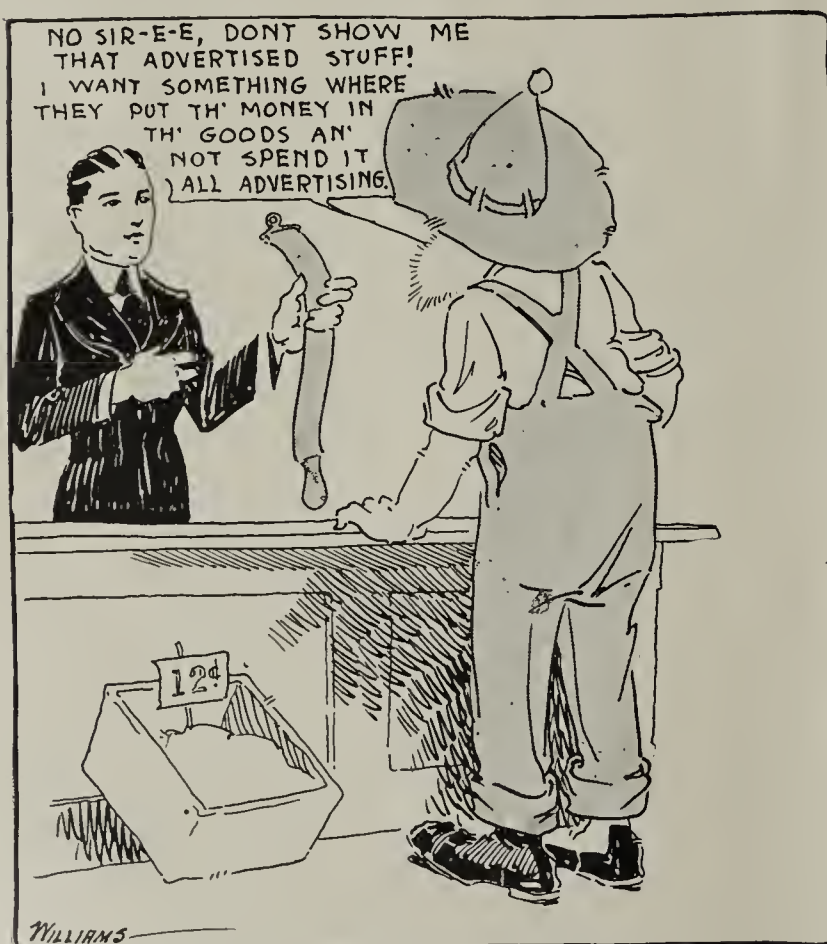
Twenty years ago people told the National Biscuit Co. that they would lose money if they tried to advertise crackers in packages. All of you know of the tremendous success they have had in developing this company thru advertising. They have demonstrated that the quickest way to create a market for a food product—the surest and most economical way—is thru advertising. Everyone knows the name “Uneeda.”

About five or six years ago a belting company started an advertising campaign in the “Saturday Evening Post.” Other belting manufacturers thought this concern foolish because they were using a medium reaching two million people in order to sell their product to a market of probably not more than a hundred thousand prospects. However, this belting company has kept consistently hammering away thru their national advertising, increasing their appropriation each year. Today there are six or eight manufacturers of belting who are advertising their products thru national publications. The appropriations of most of them are increasing. They are finding in advertising a powerful sales aid.

In a central-western state are two great competitive industries. When the first industry started it was practically alone in the field. From that day to this its productive organization has been sound, its financing adequate, its commodity right. By all the rules of precedent and production it should have held the country's trade in the hollow of its hand.

Not far away a little group of men entered the same line of business. Every handicap that could beset a struggling concern was theirs, with emphasis.

Today the second company is doing twice the business of the first. There is but one answer: that second company knows how to sell. It has stayed in advance of



Most of You Can Remember the Day When Most Advertising Was Looked Upon With Suspicion.

properly conducted publicity. We have been studying advertising for over forty-nine years and yet we are

the times. It has kept its finger on the pulse of desire. It has studied each variation in demand. Today the second concern doubles in sales the millions of the older house.

Buying, manufacturing, selling. Each of these is essential to the life of commerce, but only selling is vital. Brick may be made without straw; but brick without a market were better never made.

SELLING CANNOT BE STANDARDIZED

Selling not only is the most important industrial problem but it is the most complex. Buying and manufacturing are subject to standardization; selling—tho we may put forth rules for its guidance and control—the real art of selling can be no more standardized than can human emotions be cataloged. Opportunity and necessity are making our industries give detailed consideration to the problems of merchandizing. The great permanent market that stands ready to deliver when commerce calls, this is the market on which the far sighted industry has its eye and toward the gaining of which it is bending every effort.

Another manufacturer in a certain line broke all rules of precedent and advertised his wares to the public. His competitors laughed. For two years they were skeptical. Then the humor of the thing passed. The advertised goods were actually selling; people were going into stores and asking for them, asking for them by name, which was an unheard of situation in that industry. Unheard of because it was the first time the people had been given a name for which to ask when buying such goods. Being given a name, however, they used it. They liked to use it. Its use indicated a knowledge that suggested protection against unknown wares. The public likes to buy a product with which it is familiar. Does the public know anything about common brick?

The advertising also gave this first manufacturer another advantage. In the early days he had found it difficult to secure skilled labor, but advertising spread his name among the workers, it attracted many of the best of them. They wanted to be with a company that was known and talked about; also they saw the guarantee of steady employment and the opportunities offered by a growing concern where they, too, might find opportunity for growth.

BRICK INDUSTRY NEEDS PUBLIC APPROVAL

The brick industry today has a like opportunity thru advertising. Its position as one of the chief industries for the production of building materials can be advanced; leadership is well nigh within its grasp. The record of the brick industry is an important factor in the history of industrial America. It is one of the oldest industries in the world. For generations your industry has had picked forces of the most skilled labor in every branch of its work.

The common brick industry, however, needs a public reputation. The short, sure road to that reputation is thru advertising. Consider the "laughed at" manufacturer and his success. Advertising did it. Advertising secures and insures the market. Advertising builds up consumption, stabilizes ordering, standardizes and reduces the cost of production and selling and at the same time increases demand.

Shall the brick industry lead or shall it laugh? The market waits for your decision.

Once there was a common belief that where the consuming public had no active part in the purchase of a commodity there could be no public influence. We all

know history has proved to the contrary. Now we know how the people dictate the ultimate destiny of any undertaking. It is not the man who makes nor the man who buys who decides the popularity of a motor car for instance; but the man who walks and talks and tells of the car he hopes to have, who explains the good of this



Another Manufacturer in a Certain Line Broke All Rules of Precedent and Advertised His Wares to the Public.

and the bad of that machine. When the maker has the praise of the man in the street, he knows that his market is assured.

So the brick industry would do well to have the public on its side, to have the factory worker, the clerk, the bookkeeper, the minister, the lawyer, and all others, discuss the merits of brick. The machinery buyer thinks he buys as he selects, and he does, but he selects that which public approval has put into his consciousness. Why should not the public specify brick for the same reason?

You are all familiar with the name "Sunkist" oranges—probably the story of the California Fruit Growers Exchange will be of interest. Before the California Fruit Growers Exchange was formed at Los Angeles, the citrus fruits were marketed thru packers and the prices obtained by the growers were very unsatisfactory because the packers were in control. The grower, until the association was formed, never received a satisfactory price for his fruit and for this reason the exchange was organized. The California Fruit Growers Exchange is a cooperative, non-profit organization with a membership of over eight thousand growers. Since the association was formed and advertising "Sunkist" oranges and lemons was started, the population of the United States has increased approximately twenty-eight per cent. and the consumption of "Sunkist" oranges has increased over eighty per cent.

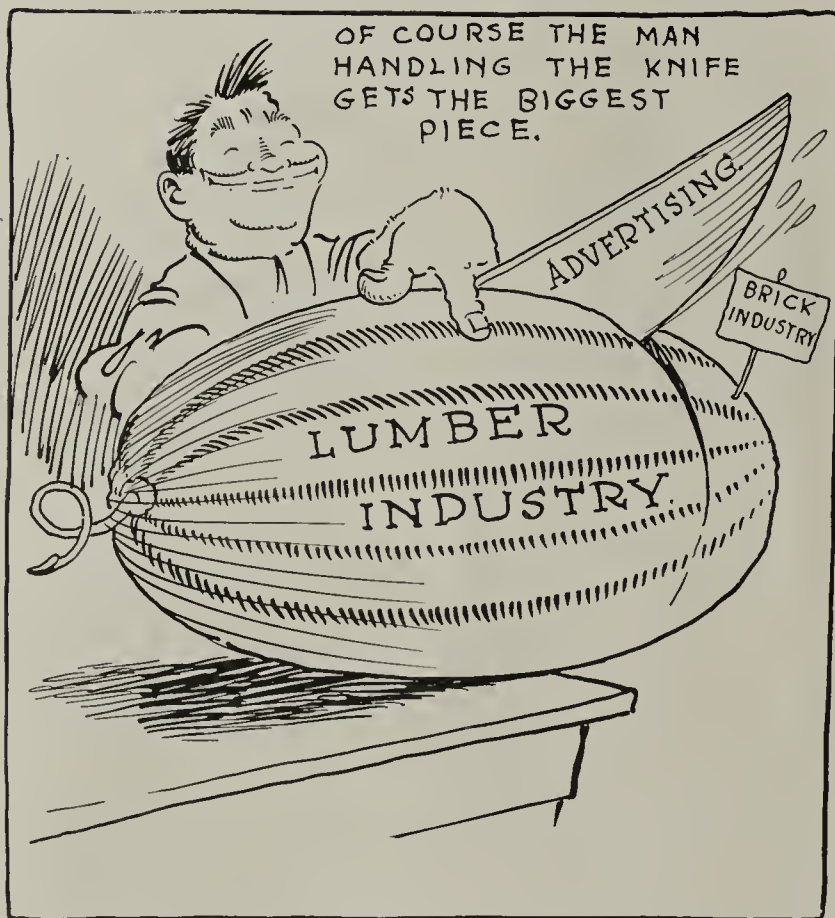
At the present time the association is spending about a half million dollars annually for magazine and newspaper advertising and the market for "Sunkist" oranges and lemons has grown to the extent that this fruit may be had in practically every town of five thousand popula-

tion or over in the United States with the exception of the southeastern states.

The basis of assessment for each grower is taken from the number of boxes of fruit shipped by each one, the lemon growers having to pay slightly more than the orange growers due to the difference in the price of oranges and lemons. The citrus growers are now in a position to get the highest prices for their fruit and the efficient organization known as the Exchange keeps the growers in touch with the market. This association is generally conceded to be the most successful business proposition by the growers as well as the jobbers and retailers thruout the country and the prices for "Sun-kist" fruits are very little higher, if any, than for the other kinds of California oranges and lemons.

The advertising of the California Fruit Growers Exchange has been so successful that the walnut growers, apple growers, prune and apricot growers associations have also started to advertise.

The California Associated Raisin Co. with headquar-



And What, for Instance, is the Result of the Advertising Done by the Lumber Interests?

ters at Fresno, Cal., has been as successful as the fruit growers since organizing and starting an advertising campaign on raisins. This organization advertises layer raisins, raisins in cartons, and raisins in bulk for the bakery trade. I do not know the figures showing the increase in consumption of raisins since the organization started advertising, but as you know, they advertise raisin bread and raisin pies nationally. The consumption of raisins by the bakery trade alone for raisin bread increased at least five hundred per cent. within three years. The raisin growers, up until the time they organized, always carried raisins over from one season to another and thousands of pounds of raisins had to be thrown away because of the fact that they could not be sold at the proper time. Now, however, the only trouble the raisin growers have is to supply the demand. At the present time the Raisin Association is having to sell next season's crop on a speculative basis due to the fact that they have created a demand for raisins which can-

not be supplied. From all indications the demand in the future will be considerably greater than the supply.

ADVERTISING TO MAKE FRIENDS

It has been our pleasure to conduct the advertising of the American Telephone & Telegraph Co. since its conception. This company did not advertise to sell service. There has never been a single effort in their advertising to gain one new subscriber. That part of the work has been left to the local Bell telephone companies. The one and only object of the American Telephone & Telegraph Co. has been to inform the public of the United States of the value of its service as a universal system, available to rich and poor, covering every section of the country, reducing the cost of the telephone to a minimum and increasing its service to a maximum, for every humble resident as well as large business concern, so that the public would insist that fair treatment be accorded this company.

It has been a delight to watch the development of this advertising. At the first there was the usual cry of monopoly, of effort to stamp out competition, of the evils of putting all the telephone business under the control of one company, and a thousand other reasons—some seemingly reasonable and some nonsensical. But the company unceasingly told the story of the value of universal service, showing exactly what the company was trying to do, what it had accomplished, what it meant to accomplish in the future, and how it was a real friend to the public. Like snow in the sunshine, opposition began to melt. It is true that there is opposition today. There always will be against a corporation, so long as politics and political ambitions exist, but the fact is that people very generally believe today in the American Telephone & Telegraph Co.—believe in its integrity, believe in its effectiveness, and therefore the attacks that were made upon it have largely ceased and it has friends in every part of the United States.

When we started advertising for the American Sugar Refining Co. several years ago, many people told us that sugar being such a staple commodity could not be profitably advertised. They said that the demand for one make of sugar could not be increased over the demand for other sugar. They told us that sugar was sugar and that we could never make the public accept one sugar as different from others.

Right here, I want to ask the ladies present if they can mention the name of any brand of sugar. Whereupon two or three ladies present in the audience exclaimed "Domino."

That is the name of the sugar of the American Sugar Refining Co. Today the name "Domino" is known nationally. Ask the average housewife the name of any sugar and she will invariably mention "Domino." We have conclusively demonstrated that advertising of a staple produce can be done with profit,

INSTITUTIONAL ADVERTISING

We are now advertising for a large steel concern that is going after public good-will. This type of publicity we call institutional advertising. What is institutional advertising? It is advertising that arouses a public admiration and appreciation of your business, builds prestige, creates confidence and good-will, interprets your service, and makes known the industry behind your product as an institution of public value—that is institutional advertising, the dynamic force supporting regular sales efforts. Institutional advertising interprets business to the public, it heightens the public understanding and appreciation of an industry. It avoids industrial

unrest by intelligent commercial education and combats the encroachment of radicalism in our national life.

Public education on all problems touching your business on the real functions and the public benefits of your business should be enunciated in broadly gauged advertising especially conceived to meet the vital need of the time.

Such advertising inevitably becomes a solid basis and a stabilizing force, upon which all sales appeals rest. It makes for business security, stability and permanency; it is the body from which the sales arm reaches and draws its strength; it is a fundamental commercial need; its practical values are limitless.

For many years we have watched the ever-changing courses of business. This observation has not been that of technical advertising men; we could hardly be regarded as such. We have endeavored to make our work in the industrial field that of recorders, investigators, interpreters—constructive business journalists, if you will. We might be called industrial and advertising missionaries.

Now, our purpose more than ever is to interpret business in its broadest aspect to the public, to aid in creating new business values, in developing a larger public comprehension of business enterprise. We approach business as outsiders, as reporters with an outside viewpoint, with a perspective of laymen—and we report the activities of a business to the public. It is for this reason that we are vitally interested in the advertising of any group of manufacturers joined together for economic and industrial purposes.

BIDDING FOR PUBLIC GOOD WILL

You have no doubt read with interest the advertising of many associations of manufacturers who are making their bid for public good-will thru the printed word. Among these associations are competitors of the brick industry. I have in mind the following: American Oak Manufacturing Association, Asphalt Shingle Publicity Bureau, California Red Wood Association, Indiana Limestone Quarrymen's Association, Northern Hemlock and Hardwood Manufacturers Association, Association of Metal Lath Manufacturers, Gum Leather Manufacturers Association, North Carolina Pine Association, Portland Cement Association, Southern Cypress Manufacturers Association, White Pine Bureau, Arkansas Soft Pine Bureau, Southern Pine Association, West Coast Lumbermen's Association, Paint Manufacturers Association and the Vermont State Manufacturers Publicity Bureau.

The lumber industry, for instance, is spending vast sums of money to maintain a demand for frame construction. It is succeeding. It has made the public believe that a brick house is too expensive to build and maintain. It has made the public believe that the most beautiful homes are built of wood—that brick houses are cold and prison-like. It has been very clever without making direct knocks against other types of construction. For instance, it has persuaded architects that they will be more successful if they design and specify for wood than if they design and specify for other building materials. The lumber industry has carried on a propaganda with the architect, the contractor, and the builder by sending them complete sets of plans and specifications for houses and other buildings. This educational work is having its effect. I dare say there is very little such work being done by brick manufacturers either collectively or individually.

I have checked over the advertising done by building material manufacturers and associations during the first six months of 1918 in the fourteen leading maga-

zines carrying this class of business.

The figures are, I believe, the latest available. In the first six months of 1918, which was, as you well know, a poor building year, the total amount of advertising done by building material manufacturers and industries in the fourteen leading magazines was at the rate of 670,000 agate lines for the year.

The cement interests used about 31,000 lines of advertising in this period, or about five per cent. of all building material advertising.

Of this amount of advertising, the lumber interests had about 66,000 lines which was almost ten per cent. of all building material advertising.

The brick and tile interests, however, used only about 680 lines of advertising in the same period. This was only one-tenth of one per cent. of the advertising done by other building material industries.

Think of it! An industry which is the third one in the country doing only one-tenth of one per cent. of all of the building material advertising. The lumber industry is doing about ninety times as much advertising as the brick and tile industry. The cement people are using about forty times as much as you are.

And what, for instance, is the result of the advertising being done by the lumber interests? Let me give you a little illustration that is rather personal.

BEING LED BY ADVERTISING

In my own home I notice the effect of their advertising. My wife told me only a few days ago that when we build she wants a frame house because frame houses can be made more artistic and homelike than houses made of brick or tile and that a frame house will cost us less than a brick or tile house. She even went so far as to point out to me the advertisements of wood construction and urged me to write for the plans and specifications offered by the lumber associations. She knows nothing of other building materials whatever but she has read with interest the advertising of the lumber interests and it has gradually led her to the idea that what she wants is a frame house.

On the other hand, I myself, am not easily led by advertising, because I see so much of it, but somewhere I have gotten the impression that "Natco" Hollow Tile is one of the best products on the market to put into a building. I must have obtained this impression thru advertising because I cannot recollect having talked to anyone about this product. The National Fireproofing Co. has demonstrated that advertising will do the job it is meant to. It will create good will toward any class of product that is worthy of having such good will.

We have a case that is somewhat parallel to your own. It is that of the coffee interests. During the past years, there has been almost no advertising of coffee and yet there has been an increasing amount of advertising of coffee substitutes and tea. The coffee interests have realized that their business is being cut into by the increased sale of these advertised beverages.

The coffee association has, therefore, elected to carry on an advertising campaign in order to increase the consumption of coffee. We have planned to make the advertising educational in character. It will be devoted to the popularizing of coffee as a beverage. Interesting facts concerning the growing, roasting, and preparation of coffee will be presented. No special brand will be pushed in this advertising, our idea being to promote consumption of coffee of all kinds.

Preliminary to the preparation of the actual advertising we have made an extended investigation for the pur-

pose of determining the best possible means of advancing the sales of coffee thru the various branches of trade to the consumer. This has been supplemented by information secured from the coffee planters in South American countries.

The money for this campaign is furnished by the Society for the Promotion of the Use of Coffee—an organization made up of Brazilian coffee planters. A tax of five reys on every bag of coffee sent out of their country is being paid by the planters. This tax amounts to a total of \$20,000 per month or about a quarter of a million dollars per year. A very good campaign can be put on for this amount of money. I might say that this campaign is planned for at least four years. In all probability it will continue on consistently after that.

CARRY THRU TO A SUCCESSFUL CONCLUSION

Some such effort seems to be necessary on the part of the common brick industry and the responsibility for such a campaign falls logically upon your association.

There is no magical amount of money to be spent by you in advertising, but whatever you do, be sure that it is thoroly done and that enough is put behind your effort to carry it thru to a successful conclusion.

First, you should make your decision to advertise, each member of your association pledging himself to pay into your advertising fund a certain tax on his production each month. Mr. Cary has suggested a tax of six cents per thousand brick per year. This seems to be a very reasonable tax, at the same time it will probably afford you a large enough proportion to conduct a very influential advertising campaign.

Next you should select an advertising committee of not more than three men. This committee should be empowered to O. K. all advertising plans. One of these men should be empowered to O. K. all advertisements and advertising material. This man should be a paid executive.

I might say right here that the difference between successful and unsuccessful association publicity will be largely in the hands of this executive. I cannot urge you too strongly to give serious consideration to the selection of such a man. The general manager of the California Fruit Growers' Exchange was largely responsible for the success of that organization.

The advertising committee should keep every member of your association informed as to the progress of your advertising campaign. The members of this committee should have a term of office of not less than three years. This would avoid the confusion which would be brought about by frequent changes.

This committee should be empowered together with the president of your association, to make a selection of your advertising agency. This agency should be thoroly equipped to properly present and execute your advertising. It would be absolutely necessary for your association to work hand in hand with your advertising agency.

The work of an advertising agency would be first to study with you the problems of your industry. You would be asked to answer many questions about the manufacture and uses of brick. You would be asked for detailed information about the market, the fire laws, the building requirements, and so forth. Your agency should also study your competitors' products for their weak and strong points.

After conferences on these subjects, your advertising agency would work out a plan of advertising to most economically promote the general sale of brick. Such a plan would include recommendations as to the publica-

tions to be used, the size of the space to be used, suggestions as to the use of direct mail matter, and so forth.

HUMANIZE THE BRICK INDUSTRY

You will agree, I believe, that such a plan could not possibly be correctly worked out until after your advertising agency had been selected and given a chance to study the conditions in and surrounding your industry. It is absolutely necessary that your advertising agent be given all the help and information possible in order to have the proper knowledge on which to base an advertising plan. After the plan is submitted by the agency and O. K'd by your advertising committee, the agency will prepare the advertisements which will in turn be submitted for the approval of the paid executive of your association, who would have authority to pass on all advertising material. The advertisements should humanize the brick industry. They would portray the romance of brick, having such illustrations of the durability of brick as the Chinese Wall, the pyramids, old landmarks, prominent fires, and so forth.

There are hundreds of details that necessitate a vast amount of work in connection with a properly conducted advertising campaign. It will be the business of your advertising agency to do this work in cooperation with your association.

USING A MASTER TRADE-MARK

Any advertising which you do as an association will, of course, help the entire industry. There will be many brick manufacturers who are not members of your association who will nevertheless benefit by your advertising. There is no way to prevent this. There is, however, a way to keep it at a minimum. This can be done by originating a master trade-mark to be molded in every brick put out by every member of your association. This trade-mark might be a circle or a diamond or a cross or any one of a number of distinguishing marks that would be easy to remember and need not conflict with any manufacturer's own marking. This trade-mark should then be featured in all advertising you do which will give the public the impression that all good brick bear this mark. You should copyright such a trade-mark and it should be owned by your association and no brick manufacturer not a member of your association should be allowed to use it on his brick.

The use of such an identification mark will have two valuable effects. It should serve to increase the membership of your association and it will give you the cream of the nation's brick business once your advertising is well under way.

After you have been conducting your advertising for a year or two and featuring this trade-mark, you will find that many of those manufacturers who had failed to join your association will then be seeking admission. All such manufacturers should not be admitted without paying a pro rata tax for the advertising that will have been done up to that time. In other words, your advertising tax should be retroactive in so far as each new member is concerned. He should be made to pay for the privilege of using your trade-mark on his brick.

PERSONAL REPRESENTATION TOO COSTLY

You will all admit, I believe, that it is impractical to try to reach all the prospective users of brick thru personal representation. It would cost you millions to get your story completely told thruout the country by such a method.

Advertising, however, which is printed salesmanship, will go into the highways and byways as well as into

the great metropolitan districts and will do so economically.

Take, for instance, the "Saturday Evening Post." This publication goes to over two million people each week. It circulates not only in the great centers of the country, but also has a tremendous rural circulation. A page in the "Saturday Evening Post" costs \$5,000 for one insertion. This seems like a lot of money, but when you figure that it is reaching two million people you get a different idea of its economy, for on that basis you will be paying only two and one-half mills to send your story to each of the two million people it reaches.

Some of you may have the idea that your advertising could be done to better advantage by sending literature direct, to a large mailing list. Supposing, however, that you had a mailing list of two million people (which, by the way, would be almost impossible to get) and supposing you wanted to send only a post card to each of these two million people, the postage alone would cost you \$40,000. On the other hand, for \$40,000 you can tell your story eight times in page space thru the medium of the "Saturday Evening Post." What is true of the

"Saturday Evening Post" is relatively true of the other national magazines.

So you see national advertising is really the most economical way for you to tell the story of common brick to the American public.

In conclusion, let me reiterate in a few words the message I wish to leave with you.

STABILITY AND SECURITY THRU ADVERTISING

Advertising brings stability. Stability means familiarity of the public with the product, a bulwark against the sudden inroads of sporadic competition—a guarantee of future volume.

Advertising brings security. Security means the confidence of the public—a protection against hasty and unfair legislation. An industry and its policies can be made so well known that it will not suffer from ignorant or unjust attacks by the people or their representatives. All of this has been made possible by the creation of a medium thru which the public may be economically reached—powerfully and often. This medium is advertising—the greatest force in modern business.



STRONGER MARKET *in* GOTHAM BUILDING MATERIALS—PRICES HAVE WITHSTOOD TESTS

BUILDING MATERIAL PRICE POSITIONS have just had their most crucial test and have, for the most part, survived, according to the Dow Service Daily Building Reports of June 23.

The test came in the form of a circular issued by one of the purchasing bureaus of the United States navy department. It was addressed to the cement distributors of New York announcing that it wanted bids on 10,000 barrels of Portland cement and, in substance, demanded a lower price than the present market level. The attitude of most of the companies was exactly that indicated in this column earlier in the year, that the strong companies would sit back and let the price cutters load up on the unprofitable business if they wanted to accept it, and wait, still longer if necessary, for ordinary building orders that would at least insure sales of cement above a pauperizing profit level.

When the circular reached the field it found the habitual price cutter already loaded up with orders and not particularly interested in this requirement. Some mills today are actually facing the necessity of appealing to the mills to sell them cement to meet the business they have booked. The stronger companies assumed the position of merely ignoring the demands for price reductions to the navy bureau, even tho intimation was made in the circular that if the prices did not show a difference from the general market quotations the matter would be taken up with the Department of Justice.

The cement market is too active to make price-cutting attractive, even for orders of this kind. Inquiry in one company in the first fourteen days of June this year totalled 400,000 barrels, as against 250,000 in the whole month of June in 1918, 330,000 barrels in 1917, 300,000 barrels in 1916, and 200,000 barrels in 1915. Contracts signed by the same company in the fourteen days of June of this year totalled 125,000 barrels, as against 30,000 barrels in the whole month of June last year, 50,000 barrels in all of June, 1917, 40,000 barrels in all of June, 1916, and 10,000 barrels in all of June, 1915. These figures are fairly representative of the move-

ment in the Portland cement market in proportion to size of non-price cutting companies.

NO ADVANCE IN TERRA COTTA PRICES

Further reflection of the strength of the market is shown in the attitude of the eastern group of architectural terra cotta manufacturers who report a sharp increase in demand due to recognition by architects and builders of the economic advantages of having the source of supply of this facing material in such close proximity to the large cities of the East resulting in comparatively low cost of raw materials and low cost of production where repetitive architectural motives are used. In this department manufacturers early in the year offered price concessions from the 1918 levels which stimulated demand. The Dow Service Daily Building Reports was informed by leading interests in the trade on June 21 that architectural terra cotta buyers will be assured that the present price level will not be increased this year. It may be necessary, however, to somewhat lengthen time of deliveries and for that reason early commitments by buyers is advised.

Further evidence of the necessity of prospective builders to promptly get into the market with their specifications is found in the fabricated steel department. The records of the Bridge Builders and Structural Society, as collected by its secretary, George E. Gifford, show that during the month of May, 1919, 49 per cent. of the entire capacity of the bridge and structural shops of the country was contracted for. In April the total was 24½ per cent., in March 12 per cent., in February 12½ per cent., and January 12 per cent. There was no price cutting in this increased volume of business. While the mills are hungry for business, they are not taking it as the result of making concession or shading.

In the dealer and distributing side of the building material market further strengthening is noted. The Brooklyn mason material dealers' yards have followed the lead of the other distributors in this vicinity and will close their yards for deliveries on Saturdays at 1 o'clock during the months of

July and August. Contractors will save delays on rush work if they will advance their week-end requirements and place their orders for Saturday consumption next week on Thursdays and Fridays.

The sharp turn for the better in building financing is registering in the volume of materials moving out of mason material yards, altho it is still too early to meter anything like what the volume is likely to be in another sixty days.

BRICK MEN WILL ADHERE TO PRICE LEVEL

Settlement of the brick barge captains' strike is looked for, according to a statement given out by William K. Hammond, chairman of the committee of brick manufacturers appointed to deal with the strikers. "There is nothing to say about the situation now," he declared, "except that the manufacturers have not receded from their position not to add any further item to the cost of brick to the consumer in this market that will result in adding to the present price of his commodity. We expect to rigidly adhere to

this price level so far as it is in our power to do so." Every job needing common brick can get it today. Eighteen barges were discharged on Saturday and the lightened barges are being rushed back to the plants as fast as possible to get them out of danger. Strikers cut loose four barges last week in the Gowanus Canal. The brick strike situation which looked exceedingly dark two weeks ago, was very much brighter Saturday afternoon and by the middle of this week the crisis is expected to be entirely closed. A strike of common laborers on buildings for 65 cents an hour was an event of the week-end, but it has not developed into serious proportions.

Price changes are few. Practically all that do occur are upward. Cast iron soil pipe moved up five points, but lead has dropped slightly, to \$5.05. There will be a price advance in heavy pressure valves this week. Former plumbers' earthenware prices have been withdrawn and new quotations will be out this week. Radiator valves have advanced 5 per cent. in one case, at least.



NEBRASKANS READY *to* APPLY OPEN PRICE EXCHANGE

IT WILL BE REMEMBERED that the Nebraska Brick & Tile Association, at its annual meeting last March, adopted a resolution to the effect that the open price plan would be made operative in the association. In accordance with these plans, the details of the open price exchange have been fully developed and blank reports prepared.

Bulletin No. 152, which has just been issued by the above organization, explains the plans and tells what it is necessary to do to make it effective. It states that if this plan is to be successful in its operation it is absolutely imperative that every member cooperate to the extent of mailing reports promptly and accurately filled out. Without the earnest cooperation of the membership, the service will be of no value to anyone and will fail. With the help of the manufacturers the consolidated reports from the secretary's office will be complete, accurate and will contain an invaluable index of existing conditions.

A monthly report blank, which is issued in duplicate, is illustrated. Both copies are to be filled out and one is sent to the secretary's office while the other is retained by the manufacturer. The first report is to be made for the month of May, 1919. First the number of finished brick and tile on hand at May 1 is determined and inserted on the blank at question 5. After adding what has been finished during the month (question 6) and subtracting what has been delivered during the month (question 8) the number on hand

at the close of the month is obtained (question 9). For concerns operating more than one plant, a separate monthly report should be made for each.

Secretary Ringer has invited suggestions relative to the information asked for and hopes to make this plan a very successful one.



Illinois House Adopts New Plan for Building Roads

Illinois has outlined a new policy for road construction by the adoption of amendments to the Federal and State aid road bills, by the lower branch of the General Assembly on May 23. The changes suggested provide that one-half of the roads may be constructed of brick or cement, and the other half of other material, at a cost not to exceed \$18,000 a mile.

The policy is adopted with a view of saving a large amount of money in the construction of both Federal and State aid roads. The amendment was inserted in the Federal aid bill for \$10,000,000 and also in the State \$60,000,000 measure, which was approved by the voters at the last general election, and the validity of which is upheld in a recent decision from the State Supreme Court.

1-PLANT REPORTING			MONTHLY REPORT-ORIGINAL		ASSESSMENT ENCLOSED	
2-CITY		3-DATE		4-MONTH OF		
5-ON HAND		BRICK		TILE (BRICK MEASURE)		
6-MADE DURING MONTH						
7-TOTAL						
8-DELIVERED DURING MONTH						
9-NOW ON HAND						
10-UNFILLED ORDERS						

This is a Monthly Report Card Such as is to Be Filled Out By Members of the Nebraska Brick & Tile Association.

1-PLANT REPORTING			QUOTATION REPORT-ORIGINAL		2-DATE	
3-PLACE		4-F. O. B.		5-PRICE QUOTED		
6-BRICK		WEIGHT		FT. RATE		
7-TILE (BRICK MEASURE)		WEIGHT		FT. RATE		
DEALERS		CONTRACTORS		CONSUMERS		
8-TERMS						
9-REMARKS						

The Above is a Facsimile of the Quotation Report to Be Filled Out. On the Reverse Side of Both of These Cards is Given Instructions for Filling Out.

It PAYS *to* STUDY SALESMANSHIP

This Is the Third of the Series of Articles on the Subject of Salesmanship

IT DOES NOT SEEM that there ought to be any necessity for showing a salesman why he should study salesmanship, why he ought to be searching constantly in books and periodicals as well as in his own experiences, for more information about selling. You would think it only natural that a man wanting to be a better salesman would be anxious to find out the way.

Unfortunately there are a good many men in the selling business who are not, strictly speaking, anxious to become better salesmen. They want to sell more goods; they are even anxious to do so, but it is merely that they are anxious to make more money. As for gaining more information about the science of their profession, they lack a good deal of being exactly crazy about it.

CANNOT LEARN IT ALL BY EXPERIENCE

The man who counts on picking up salesmanship as he goes along, who expects to learn it all by experience, will fall far short of learning all he ought to learn. Your experiences or mine will not cover the whole range of business getting. We will not get the benefit of a certain method until we stumble upon it ourselves, if we never study salesmanship. There are many things we would never stumble upon. If we depend upon learning the best selling methods by experience, we will not get far beyond the first stages. We will remain rudimentary salesmen to the very last.

The first reason for studying salesmanship is probably the selfish reason. That is the reason that appeals the most strongly. The better you are able to sell goods, the more salary you will get.

Salesmanagers are not blind to the results obtained by individuals, not by any means. It is their business to know what the individual salesman is doing as well as to take note of the aggregate results of the work of all the salesmen. Just because no one is following you around in your territory and watching how you work, or just because no one is writing you letters, complimenting you on the orders you send in, don't think no one is taking notice.

If your house is the right kind and rightly managed, it knows just what every salesman is doing. If it is not the right kind, the sooner you change and get connected with one that is, the better for your future welfare.

The right kind of a position is one where good work is required and where it is appreciated, where it will be necessary for you to study salesmanship in order to hold your own with your fellow salesmen.

Every house is doing all it can, within its knowledge, to increase its business. The management is advertising and planning and developing the quality of its output with a view of getting more sales. But after all, it is the work done by the salesmen that counts in the long run. The getting the business is up to you and you need to know how to do your part correctly. What the house does for the trade helps and makes it easier for you to sell goods, but if you are satisfied to solicit orders with exclusively home grown salesmanship methods, you will not get enough business to pay your salary.

A SALESMAN CAN MAKE OR BREAK A BUSINESS

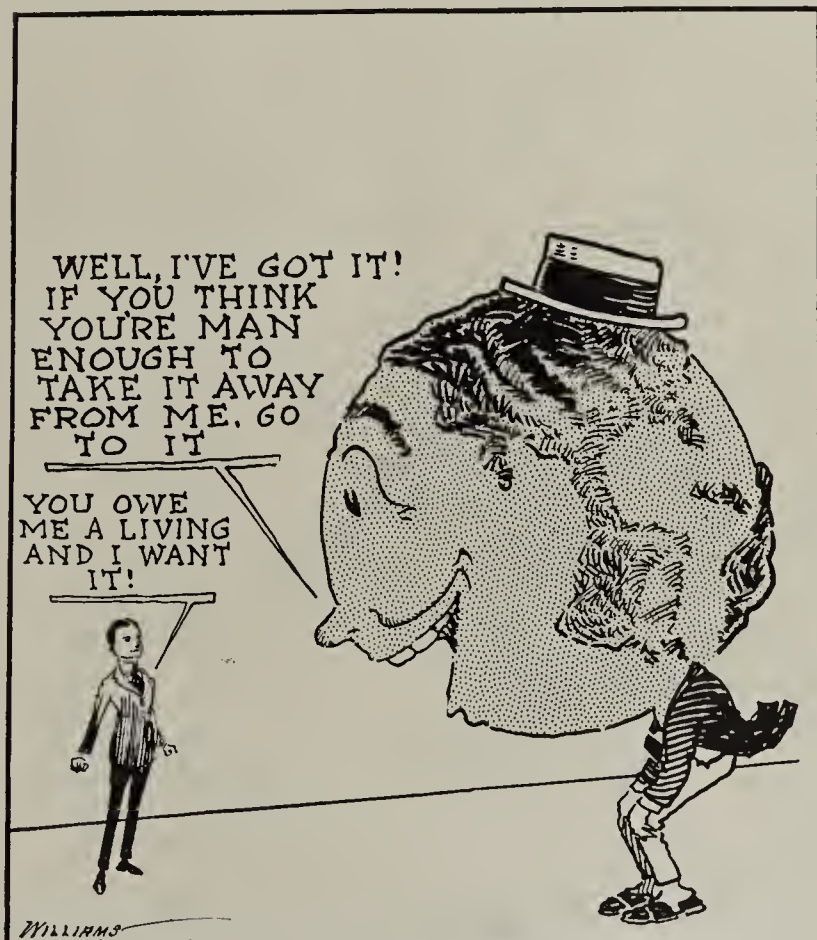
The salesman has in his hand the making or the breaking

of the business. You are not a mere supernumerary; you are playing a leading part. Can you hope to be successful at this if you will not study your lines?

The good salesman is always increasing the business of the house. The poor salesman exerts an influence the other way. Which way does your influence work?

Whatever your feelings may be about getting ahead, increasing your effectiveness on your employer's part, you owe it to yourself to get along as fast as you can. If you have formed the idea that the world owes you a living which it is bound to pay, you make a mistake. The world owes you only what you can collect from it, and the best way to get what is coming to you is to study to develop the ability to earn it.

Every day you spend more or less time in learning something. Perhaps you are learning the views of an acquaintance about political matters of practically no importance. Perhaps you are learning the latest social gossip in your circle of friends. Perhaps you are learning all about what is happening in the sporting world. All these things you are learning may be absolute facts, but that does not make them of any value. A vast conglomeration of miscellaneous in-



If You Have Formed the Idea That the World Owes You a Living Which it is Bound to Pay, You Make a Mistake.

formation which has no other merit than that it is composed of facts will not develop you as a business man. Don't waste time learning much that is not worth learning.

Herbert Spencer said of the study and learning of useless or even of ornamental knowledge, "As such studies occupy the leisure part of life so they should occupy the

leisure part of education." Don't give up to them time that is valuable for anything else.

The main study of your business day should be the improvement of your methods of working. I believe it is desirable that even a large portion of the time you are not on duty be utilized for the increasing of your working knowledge.

Of course one must have physical recreation and some amusements, but those forms of so called recreation which result in lowering one's vitality, and reducing strength, and which consists partly in stuffing one's body or mind with useless food or information, ought to give place to the study of one's profession, whether it be salesmanship or surgery.

WHAT TO SAY AND HOW TO SAY IT

Two things that every salesman ought to learn, before he learns them by unfortunate mistakes, are what to say and how to say it. If you are to know what to say about the goods, you must make it your business to study them, reading all the available literature about them, advertising matter and all. If you want to know how to say it, you must study the principles of the English language and of salesmanship.

We all want to be high class workmen. There is in each of us a tendency toward the top of the profession. This is ambition and some of us have more of it than others, but it is very rare to find a man who in his heart has no ambition at all. But of what use is ambition unless we respond to its urging? If we form the habit of paying no attention to its prickings, we will cease to feel them and then for us ambition will have ceased to exist.

I have recommended first the study of salesmanship be-



Don't Sit and Wait for Knowledge to Come to You, to Throw Itself in Your Face. Go After it.

cause it pays for the reason that the selfish appeal is the one that hits us all the strongest. When we are made to see that a thing will pay us, we go ahead and do it when we would not move a step just as a matter of duty.

There are however plenty of salesmen who acknowledge the higher reason for making good. There are more men

than you think who appreciate the fact that there is more to life than the mere dollars and cents involved, who find a satisfaction in doing their work well for its own sake.

Fortunately for such men, it is almost always the case that the man who does the thing well for its own sake finds himself in the end the man who receives the best pay. In other words it pays to do conscientious work.

The man who determines to become a high class salesman because he realizes it will pay him, if he succeeds, will remain high class because it suits him, because he likes it. He will never willingly drop back into the time-serving class.

For a man to take a position as traveling salesman and refuse to study salesmanship is the same thing as for a medical student to refuse to study medicine. It is just as essential for the salesman to study salesmanship as for an apprentice in a machine shop to study machinery.

If you decline to study the theory of selling and seek to learn it only thru experience, you will be to the high class salesman what the pettifogger is to the real lawyer.

A good many men try to get along the easy way because they are young and fail to realize their responsibilities of life. They think they will be young forever.

STRIKE YOUR GAIT EARLY

It may do well enough to slip along without much effort now. Your employer may be willing to take a chance on you because you are young and he hopes that one of these days you will strike your gait. But unless you do strike your gait, you will find yourself without a job, and when a man has reached no more than early middle age without showing ability, he will find that employers are not anxious to put him on the pay roll. Everybody knows that the man who is going to make good, who has it in him, will show what he can do before he shows any gray hairs on his head.

If you do slipshod work while you are a young man, you will do slipshod work when you get older, because you will not know how to do anything else. Of course the fellow who does not try, will be the low man on the list, and you know at which end of the payroll they begin when it becomes necessary to drop off a few names.

A man who is just about making his wages can be spared at any time without reducing the earnings of the business. A man who always sells enough goods to make a good net profit on his salary can never be spared.

It is not enough to consider the present. We must look into the future and it does not require a prophet to tell that the successful men of the future will be those who are studious boys today. The man who stands at the top ten or fifteen years from now will not be he who waited to learn it all by experience.

Look into the future! Even you who may have an independent income and who work only to pass away the time, you need to know how to work in an efficient manner. You can never become a successful boss unless you are a success as an employee. You hope to be in business for yourself eventually, or at least to be at the head of a selling force. You who have not first learned salesmanship, what would you do with a selling force under you?

There is nothing in this world any easier or cheaper to obtain than knowledge. There is plenty of it. You will never be troubled by a scarcity of available information. You find it everywhere and the price is merely the inclination to get it. Study every source of information that comes before you, and if the sources do not appear as rapidly as you wish, hunt them up. Don't sit and wait for knowledge to come to you, to throw itself in your face. Go after it. Knowledge of your goods and of salesmanship are the foundations of your life success.

TREATING *a* CANADIAN CARBONACEOUS CLAY

*A Short Article Telling How Difficulties With Carbon
in the Clay Were Overcome Thru Proper Burning*

By J. Keele

*Read at the Seventeenth Annual Meeting of the Canadian National Clay
Products Association, Montreal, May 26, 1919*

CARBON MAY OCCUR in clays either as vegetable tissue, such as stems, roots and leaves, or as asphaltic and bituminous material or as hard coaly substance.

The first kind of carbon is often found in surface clays used for brickmaking and generally causes no trouble in burning.

The asphaltic carbon occurs mostly in shales and altho the quantity present may be very small it is sufficient to give a dark color in the raw state, and to require special treatment in the burning process.

Certain beds of fine grained stoneware clay which occur overlying the bituminous sand deposits in Northern Alberta are impregnated with bitumen to such an extent that it is almost impossible to use them, as the fine texture of the clay does not permit the necessary free passage of air thru the body to burn out the carbon, before vitrification sets in and prevents further oxidation.

Carbonaceous shales are frequently found in the coal measures of Pennsylvania, Ohio, and Illinois, where clay-workers have more or less difficulty in overcoming black coring and swelling or other defects which manifest themselves in the burning process.

In some plants using these shales the fires have to be drawn and the kilns closed as soon as the carbon in the shales begin to burn, and firing is not resumed again until the carbon in the clay is exhausted.

CARBON HITHERTO OF SMALL CONSEQUENCE

Brickmakers thruout Canada have so far had little experience in burning carbonaceous clays as those generally used are the glacial surface clays which do not contain carbon. The shales used in the vicinity of Hamilton, Toronto and Montreal, are free from carbon or contain so little that it does not cause trouble. Occasionally evidence of swelling with black cores is found, especially in the red, dry pressed, shale brick, but this appears to be due to a portion of the iron content of the shale not being thoroly oxidized before the finishing temperature in the kilns is reached.

Powdered coal is often added to clay when making soft mud brick, in order to assist the burning and make a more even distribution of heat in the scove kilns in which these brick are burned. Sawdust is added to clay when making porous hollow building blocks, or terra cotta lumber.

Carbon in these forms is easily burned out of the bodies in which they are used, as it is scattered in fairly coarse particles thru the mass, and the finishing temperature of the burned wares is kept low, therefore oxidation can proceed thruout the whole process of burning and cooling.

The powdered coal and sawdust have a certain fuel value

as their presence in the clay undoubtedly assists in the burning process.

Experiments recently made by the writer for the Peerless Brick Co., at Ottawa, proved the necessity for careful preliminary investigation before using a new and untried material.

The products hitherto made by this plant were soft mud brick, field drain tile and hollow, wire cut partition brick, all burned in scove kilns, but the owners decided to enter the market for stiff mud, face brick, and hard burned fire proofing.

The clay being used was not suitable for these products, so it was proposed to utilize a supply of black shale, which occurs a short distance from the plant and to mix it with their clay.

No previous use had been made of this material in the clay working industry, but it was the only shale available in the district. It is rather gritty and has only a low plasticity when ground and wet.

A certain amount of trouble was anticipated because the shale contains in addition to the carbon a small amount of iron pyrites, which must also be oxidized in burning. As long as there is any carbon present it appropriates all the oxygen in the air entering the brick, consequently the iron sulphide is not oxidized until all the carbon is expelled.

TEST MADE ON CARBONACEOUS CLAY

The shale was ground to pass a 10 mesh screen and mixed with an equal weight of clay.

Rustic face, solid, and plain, standard size, hollow brick were made by the small auger machine at the Mines Branch laboratory. The burning was done in a down-draft test kiln, fired with coal and coke.

The first trials were burned with a steadily rising temperature at the rate of about 80 deg. Fahr. an hour for 24 hours to the finishing heat of 1850 degrees. The samples resulting from this trial had a hard black core with a spongy structure and were badly cracked and bloated.

What evidently happened in this case was that the carbonaceous matter in the shale was not completely burned out of the brick before the surfaces had become so dense that the free passage of the gases thru the body was no longer possible. The bloating was due to the ineffectual effort of the gases forming in the body of the brick to escape thru the vitrified skin.

From the information gathered by the first test it was decided to arrange the burning of the next lot of trials somewhat differently. The heat was raised at the same rate

as before until a temperature of about 1,550 deg. was reached. The kiln was held at this temperature for about four hours then closed and no firing was done for three hours more. The firing was then resumed and the temperature raised at the regular rate until the finish; the total time occupied in burning was about 30 hours. The result of the second test was that the brick were intact and the black cores completely eliminated by this method of burning.

The carbon present in this shale cannot be said to have any fuel value as the longer time taken in the burning process offsets any advantage in the heat arising from its combustion.

The carbon may rather be considered as a detriment in shales with a low vitrification point such as the Ottawa shale has, as there is always the danger of vitrification beginning before the carbon is completely eliminated, a condition which is sure to result in bloated brick.

DETERMINING WHEN OXIDATION IS COMPLETED

There are two well known methods of determining when the carbon in brick is completely burned out, and when it is safe to proceed to a rise in temperature.

One method is to begin drawing trial brick from the kiln thru an opening in the wicket when the burner decides that the proper temperature has been reached. By drawing brick at certain intervals and breaking them it can be seen that the black core gradually grows smaller and finally disappears. When the last trace of black is gone it is then safe to raise the temperature of the kiln.

Another guide is the use of a pyrometer outfit attached to the kiln. By this means the burner watches the indicator of his pyrometer dial, and by careful firing does not exceed the proper temperature until the danger period is passed; the length of time of holding the fires at a certain temperature having been decided before hand by draw trials.

Coal ashes either from anthracite or bituminous coal can be ground and used as a grog in the brick clay of eastern Ontario or Quebec for the purpose of making hollow block. The advantage of using ashes is that it may contain a little unburned fuel and it also assists materially in fast drying of the wares and in reduction of shrinkage.

The clay in the Ottawa and St. Lawrence Valley is as a rule very sticky and plastic and will hold about an equal weight of ground coal ash and still make a workable mixture. A dry pan or some method of reducing the ashes to the proper size would have to be added to the plant.



H. H. Camp to Continue In Business

Explanation of the absorption of the Camp Conduit Co., by the Cleveland Builders Supply Co., and the Barkwill-Farr Co., all of Cleveland, Ohio, is offered to the clay products interests of the country by H. H. Camp, president of the company that bears his name. While the Camp Conduit Co. will cease to exist July 1, Mr. Camp does not intend to retire from the brick and tile producing business. He announces as his reason for retirement from business in Cleveland the fact that his home is in Akron, and that the trip from a city 30 miles away to his business in Cleveland is getting to be more than he cares to put up with.

About the first of the year Mr. Camp, with his brother, L. W. Camp, will start an entirely new business for the production of brick and tile at a new plant to be constructed at Mogodore, seven miles east of Akron on the A. C. & Y. Railroad. The capacity of this plant at the start will be 200 tons a day.

L. W. Camp has been engaged in the brick and tile pro-

ducing business for 20 years, and has at present a plant in South Akron, with a daily capacity of 100 tons. This plant will be sold, and the combined resources will be used in financing the new Camp project.

The Camp Conduit Co., in Cleveland has been in business for the last 15 years. The three producing plants have had a combined capacity of 300 tons a day.



New Brick Company for Cleveland, Ohio

Plans of the Superior Brick Co., Cleveland, Ohio, recently incorporated in Ohio, are announced this week by J. F. Aten, president of the company. It is expected that at the present rate of progress and construction, actual production of common brick will start October 1. The company now is closing negotiations for the construction of brick and steel buildings which will form the factory proper on property acquired in the southern section of Cleveland. This property consists of clay and gravel deposits, containing about 50,000,000 cubic feet of clay for brick-making purposes. The property comprises about 25 acres, with private right of way to the Baltimore & Ohio Railroad, with side track and switching facilities.

The feature of the new plant will be the use of automatic machines capable of producing 6,000 brick an hour and with only two men required to operate it, while the capacity can be extended to 7,500 an hour without additional labor. Present plans, according to Mr. Aten, call for a daily production of not less than 100,000 soft-mud brick a day, three hundred days in the year.

"Because of the tremendous amount of building yet to be done in the Cleveland district, as indicated, for example by the shortage of 15,000 houses alone, we will concentrate on developing the territory in and about Cleveland at the outset," says Mr. Aten. "This we believe we will be able to do efficiently, because our material and our plant will both be within the city limits of Cleveland."

The Superior Brick Co. as organized is strictly a Cleveland concern, being composed of prominent business men of the city. Mr. Aten has previously been associated with various enterprises here, and more recently has been connected with the Arnold-Creager Co., New London, Ohio. Officers besides Mr. Aten are James A. Cannon, of the printing firm of Davis & Cannon, vice-president; George S. Powley, secretary; Charles U. Davis, also of Davis & Cannon, treasurer. Directors include the officers and Henry J. Hain, of the Sherwin-Williams Co.; M. Helper, identified with various real estate interests; Charles Rivitz, of the Charles Rivitz & Co., plumbing supplies; Frank E. Davis, also of the Sherwin-Williams Co. Temporary headquarters of the company have been established at 648 Leader-News Building.



We Were In Error

On page 1080 of the June 17 issue of *Brick and Clay Record* appeared an item telling of the formation of a large new refractories company. In mentioning the officials of the Eastern Refractories Co. an error was made which should be corrected as follows: James F. Stott, is president, while Ellis L. Orvis is vice-president and chairman of the board of directors. This was reversed in the item printed before. The other officers were named correctly.



It is reported that nearly ten billion brick are needed for government housing schemes and private building in Britain in the next two years. The average annual output before the war was less than three billion.

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products Such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

POTTERY TRADES IN GREAT BRITAIN



REPRESENTATIVES of important Canadian houses who have been in London recently, and in the potteries district, have brought reports of Japanese competition in the important Canadian market which have caused some perturbation.

The net result of the inquiries is that while Japanese competition is likely to be an increasing and serious factor in the future and must be guarded against, the immediate situation is one that need give no cause for anxiety, and is, indeed, somewhat exaggerated.

Japanese wares, particularly of fancy varieties, vases and such likeliness, have long found their way into various markets, and by reason of cheapness have obtained a fairly ready sale. Moreover, it has frequently happened that a first-class house has put on the market an absolutely first grade line of goods of superb workmanship and a few months afterwards has discovered a cheap and tawdry Japanese replica selling at an absurd price, due largely to the extreme cheapness of labor in Japan. Now, however, Japanese domestic wares, notably tea sets, are cutting into British trade in Canada, and, as an instance, white and gold tea-ware is quoted. Considerable quantities of this and similar lines are shipped to Canada by the Staffordshire potters, and it is said that the Japanese price puts the English goods completely out of the running. There is probably something in this, but the opinion is held that the Canadian houses will soon find that cheapness is not the only criterion, and that the quality of the ware is such as not to be saleable side by side with the Staffordshire goods.

CONSIDERING JAPANESE COMPETITION

Some time ago, Australian agents raised a similar alarm to the effect that Japanese goods were cutting severely into English trade. That appeared to be so for a time, but the houses who took up these Japanese wares sustained considerable losses, owing to the very inferior quality of the bulk. The same will happen in Canada. Nevertheless, Japanese competition—especially now that they are making earthenware—must not be discounted in legislation for the future.

Just now, besides the coal shortage, there is a great de-

ficiency in the supply of plaster used in great quantities for mold making. So serious is the famine in this material that the matter is being taken up by the Joint Industrial Council.

Despite the many difficulties under which the pottery industry is laboring, it is undoubtedly better situated than many trades which are in a state of transition from war to peace work.

During the war the organization of the pottery trade was maintained intact, and not a single pottery factory throughout the United Kingdom was closed down. Its supply of labor was depleted and its materials became inadequate, but a reduced production was always maintained at a fairly steady rate. And now, on the eve of peace, its output, tho not increasing at the desired pace, is probably two-thirds of the prewar amount, and books are full of orders. Competition of a keen character is threatened in export markets but for the present there is a substantial trade with most oversea countries, limited however, by lack of shipping.

WORK OF THE NATIONAL COUNCIL

The National Council of the pottery industry—the first Whitley Council formed in the country—is proving its practical value. For example, among a variety of important subjects the members recently gave careful consideration to the South American trade, an exceedingly important branch of overseas business.

The attention of the Government was called to the serious effects which the greatly increased import duty on pottery recently imposed by the Brazilian government will have upon British exports to that market. Then, in regard to the Argentine, large quantities of ware are being imported into that market purporting to be of Dutch manufacture, but of whose origin there is considerable suspicion. The council decided to inquire of the Board of Trade as to the real origin of these goods.

In consultation with a medical officer and inspector of the Board of Education, the National Council considered the provisions of the new Education Act in relation to the industry. They approved a policy having for its aim the improved health and better education of juvenile workers.

The National Council had made inquiries regarding the serious shortage of plaster, required in large quantities for mold-making, having ascertained that it was due to an inadequate number of railway wagons for conveyance, made representations to the railway executive and the railway companies. Other matters considered included the question of apprenticeships interrupted by military service; the training of disabled ex-service men; a proposal by the Australian government for the training in the factories of ex-soldiers to enable them to gain experience in the industry; and the question of the annual holiday being held at the end of June instead of the first week in August, which is arousing a keen controversy locally.

The more complete organization of both sides of the industry is proceeding apace. The managers and officials now have their association; the clerks have a strong numerical

branch; and the Pottery Workers Society report a membership of 33,000 not including men on military service, out of 46,000 operatives engaged in the industry before the war. All are represented on the National Council.

LITHOGRAPHIC CERAMIC TRANSFERS

Towards the end of the month of May brisk business characterized the pottery trades thruout, but in no department is there greater activity and development than in the "key" industry concerned in the manufacture of lithographic ceramic transfers, now so largely and effectively used for the decoration of wares.

All artists and designers with practical knowledge of the industry recognize this not only as an essential means of decorating ware for the millions, but, rightly used, as a really artistic medium. Indeed, on the ceramic transfer designer and manufacturer rests the responsibility for the good design of a great bulk of the china and earthenware produce.

Simplicity and restraint, flat treatment of color masses, and considerable on spacing in relation to ornament are the primary requisites for sound design, and the Staffordshire lithographic transfer makers are getting on the right track. There is room for improvement, however, but they, like every other producer of goods, must make the articles that sell, and there is still a demand for the florid, the bizarre, and the naturalistic types of decoration. Nevertheless, firms are only too anxious to better the artistic standard of their products, and at least one house has given eminent designers the opportunity of producing what they consider the right types of design, and has agreed to manufacture them, regardless of immediate profit or loss. That is the enterprising spirit which will win the day.

Before the war the ceramic transfer industry was chiefly in German hands. The outbreak of hostilities resulted practically in a famine in transfers, but Staffordshire and other firms turned their attention to the production of English transfers in bulk. Existing works have been enlarged; new ones have sprung up; technical difficulties, especially in regard to colors, have been overcome; and now the sheets of English transfers in use may be counted by the tens of thousands where they were hundreds before the war. They are technically and artistically excellent, and they are being improved every week.

A very extensive new works for the manufacture of lithographic transfers, started operations at Burslem during the week ending May 24. The buildings are commodious and the equipment up-to-date. The firm is setting out on the basis of large-scale production as the means of meeting the competition which is sure to come.

This "key" industry cannot exist without some protection, and it cannot compete with German transfers at prewar prices, or at the "bankrupt stock" figures at which the enemy would be glad to sell nowadays; but by means of efficient equipment, economy of organization and large output such as is the policy at this new works any reasonable competition can be met; and there is a great field for British transfers, not only in the home market, but in the United States, France and other pottery producing countries. In the development of this new trade reliable technique is, of course, required, and that has been attained—but freshness, tastefulness and real artistry of design will be more and more the deciding factor in making new business.



Pottery Demand Greater Than Ever Before

There will be no general suspension of operations in the general ware potteries of the United States this summer. The demand for merchandise is too heavy to permit any

inactivity in any particular plant. The same rule will hold good in the stoneware potteries in the Zanesville and Akron, Ohio, districts and in the white ware shops in Ohio, West Virginia and elsewhere. A number of the general ware potteries have sufficient business on hand to insure steady operations to capacity for from four to nine months ahead, and in one particular instance a certain West Virginia pottery is reported to be oversold for the next nine months' production.

Buyers who have been visiting the various pottery markets during the last six weeks all tell the same story, that "business at home is very active and the demand for ware greater now than has ever before been experienced." This statement is backed up by the fact that these same buyers not only look up back orders, or unfilled shipments when they are in the market, but are anticipating their future requirements.

During the war, the dinnerware manufacturers did not place any new decorations or shapes on the market. Since the ban against factory sales extensions has been lifted, the inquiry for new shapes from modelers for the 1920 trade is very active, and many of the manufacturers have, since the first of the year, placed a number of new decorations on the market. Pottery supply salesmen are now making the rounds of the trade with new decorating designs for late fall delivery, so that when the 1920 selling season opens next December the sample rooms of the general ware plants will be filled with a host of new treatments in both border and spray patterns.

Production is not the salient thought in the minds of the general ware manufacturers. There is positively no need for any pottery workers remaining idle. There is work for all. The returning soldier is received by his former employer and fellow worker with open arms. The return of many soldiers and marines has been noticeable in the production in the East Liverpool, Ohio district, which has been gradually increased during the last four months.

No labor trouble is anticipated by either manufacturers or employes in the pottery trade this season, altho the present wage scale expires October 1, and a joint wage conference between the Labor Committee of the United States Potters' Association and the Conference Committee of the National Brotherhood of Operative Potters will be held probably in August. At present an amicable feeling exists between manufacturers and operatives. That some changes in the existing wage scale will be suggested by the Brotherhood convention which convenes in Atlantic City early next month is generally admitted. These proposed changes, however, must go before the joint wage conference for general joint approval before they will become operative and binding upon both sides.

To show that a general demand exists for new dinnerware patterns is shown by the fact that the Colonial Pottery Co. has been compelled to add between fifteen and twenty new decorations to its general line of dinnerware. This is quite in line with other manufacturers in the East Liverpool, Ohio, territory. These manufacturers are not only selling a heavy volume of business in open stock dinnerware, but the demand for dinner sets has increased at a wonderful rate since the signing of the armistice. Car lot business in plain white ware is also heavy. In general, this particular line of business now exceeds all former high records in demand.

One new feature noted in the domestic pottery trade is the production of decorated teapots, a line of business that was formerly almost exclusively controlled by the eastern import concerns. Since the beginning of the war there was a gradual reduction in the import of this item, and then it was that the American pottery manufacturer stepped into the game and has made production so general that the demand

for the imported item is admitted to be growing less annually. This particular line of merchandise is being made in several bodies, the more popular priced lines being Rockingham or yellow ware and the finer grades being vitrified fireproof china and coin gold decorated. The demand for the latter line is practically taxing the capacity of those concerned in its manufacture.

That a general resumption of building thruout the country has started is reflected by the fact that the demand for sanitary pottery is increasing rapidly. At the Bowers Pottery Co.'s plant at Mannington, W. Va., about 100 additional workers were given employment, seventy in the pressing department and twenty in the casing department. The engagement of this additional number of workers will practically double the production of this plant. For several years, the general demand for sanitary ware has been rather inactive due solely to the fact that building operations on a large scale have been at a standstill. Since last May 1, however, there has been a decided change, and the demand for all items in the sanitary pottery line has steadily advanced. Several sanitary potteries are now reported to be working full time and making practically capacity production.

The general opinion prevails among pottery manufacturers that no time can be announced for the filling of orders received after August 1 next for 1919 delivery. Several manufacturers have stated that judging from the manner business is now coming in by mail, it will be difficult to guarantee delivery very much longer. This applies to the general dinnerware lines, plain white ware and some lines of hotel ware. The majority of potteries are now weeks back in filling current business, and new specifications are arriving in every mail. That dinnerware plants will soon be taxed to capacity, there is no question. It is for this reason that so many buyers are coming into the market and anticipating their future requirements. The early delivery of fall merchandise is wanted in the majority of instances.



Chemical Porcelain

Prior to 1914, the United States was dependent upon imports for its supply of chemical porcelain. At the outbreak of the war in August, 1914, and the subsequent embargo, the question before the American chemist was "what will we do for our supply of chemical porcelain?" Mr. A. Coors and his three sons were engaged in the brewing business. On January 1, 1914, Colorado went dry. Located at Golden, Colo., was an old brewery in which Mr. Coors had the controlling interest and which had closed. Mr. Coors and one son were engaged in closing up the affairs of the brewery, and he instructed his other two boys, who had no experience whatsoever, to open up a pottery and see what they could make of it. "Coors U. S. A. Chemical and Scientific Porcelain" is the result. They began making fireproof cooking ware on January 1, 1914. In August, when the war in Europe started they began experimenting in the manufacture of chemical porcelain, and during the last six months of 1914 succeeded in producing 144 cases; in 1915, 127,238; in 1916, 403,980; in 1917 533,064, and, in 1918, 1,347,235. These figures are valuable in that they show that if the available supply of imported porcelain was diminished "Coors U. S. A. Porcelain" is produced in sufficient quantity to make up the deficiency. Today the plant is in a position to meet the requirements of the country. However, altho they do not as yet feel German competition, the future of the plant is jeopardized by the appearance in this country in the last two years of the increased amount of Japanese

porcelain, which due to the difference in labor cost can be produced much more cheaply in Japan than in this country, and has the additional advantage of being allowed by the Act of October 3, 1913, of coming into this country duty free to educational institutions, which renders it an utter impossibility for Coors to compete with this imported porcelain.

This is one of the infant industries worthy of the attention of the Ways and Means Committee in the preparation of the forthcoming Tariff bill. We are of the opinion that the Congress should recognize the fact that the bulk of chemical glassware and chemical porcelain imported into this country is destined for the use of scientific and educational institutions, and the present Tariff Act affords no Protection to domestic manufacturers of such goods. They should be taken from the Free List and given the ample Protection which their importance demands.—
American Economist.



The S. S. White Dental Mfg. Co., Prince Bay, Staten Island, opened its new recreation grounds at the local plant on June 7, with employes from the Staten Island factory, Philadelphia plant and New York City district engaging in a contest in a series of sports, including baseball, trap shooting, running jumps, different yard dashes, and so on. About 90 employes came on from Philadelphia and a like number from New York; the affair was highly successful and thoroly enjoyed by those participating; the new grounds are nothing short of a real delight and have found decided favor with the local workers. This company operates a most interesting porcelain department at its Philadelphia plant, executing intricate and delicate work in a remarkable manner.



An interesting talk was recently given before the San Diego Business and Professional Women's Club, at their regular luncheon at the Y. W. C. A. recreation center by Herman C. Markham, of National City, whose art pottery is known thruout the country. Mr. Markham told of the establishment of the Markham Pottery at Ann Arbor, Mich., and exhibited several examples of his work, including the first piece he ever made, when the potter's wheel used was made from an old sewing machine and a jig saw. For the past five years, Mr. Markham and his son Kenneth have been manufacturing pottery at National City. Each piece turned out is individual, and is never copied. Distinctive designs and coloring is applied to all the work.



The Diehl Pottery Works, Perkasio, Pa., has been acquired by the Morris C. Max Co., Allentown. The company has been manufacturing roofing tile and other specialties, and the business will be discontinued. The purchase includes machinery at the plant, equipment and stock, and will be disposed of in the open market.



Many of the brick-making plants in England stood idle during the war and will require much time and money to put them in shape for operation. While the British Government has placed orders for 800,000,000 brick, these orders went principally to the large manufacturers. Much dissatisfaction is expressed at the avoidable delay in the resumption of building operations and the inefficiency of government officials in the distribution of raw materials. It is felt that the Government should announce its policy in regard to the sale of war materials and should aid the large number of small producers to re-start their plants.

The SUPERINTENDENT

Helpful Hints for Practical Men Whose Problem is Maximum Production With Minimum Cost

Metal for Journal Bearings

An alloy of antimony and lead does not shrink on cooling, but on the other hand expands. This accounts for its use in type for printing. It is this same property which makes the alloy a very desirable one for journal bearings. When babbitt, which is a mixture of varying composition of antimony, lead, copper and tin, is poured into a cold casting, the iron of the casting does not become heated before the babbitt is chilled, hence when the babbitt is cooled it shrinks away from the casting and becomes loose. This can be avoided by heating the box so that as the metal lining shrinks, the casting shrinks with it and holds it tight when cold. However, the best method of securing tightness of the lining is to use the antimony alloy mentioned above. The expansion of the alloy at the instant of solidifying forces the metal into every part of the journal.



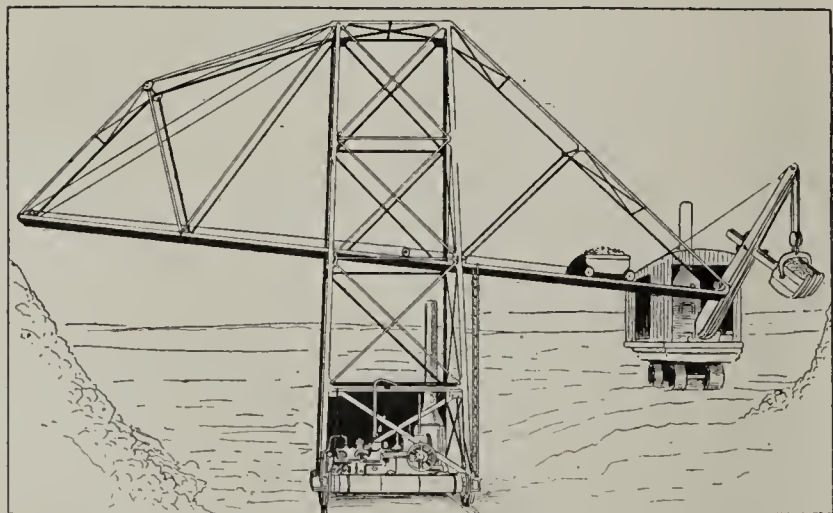
Amount of Clay for a M Brick

A question and answer appearing in the June 17 issue under the title of "The Weight of a Cubic Yard of Shale" contained an error which we herein take the opportunity to correct. The item stated that it requires about two-thirds of a cubic yard of shale to make a thousand ordinary brick while it should have read one and two-thirds cubic yards for a thousand brick.



An Unusual Stripping Device

The accompanying sketch and idea was presented in a recent issue of "Rock Products" and it occurred to *Brick and Clay Record* that it was of sufficient interest to call to the attention of its readers. Possibly it will suggest a plan to someone who is confronted with a problem similar to the one mentioned in the item. The illustration shows a quarry stripping machine in use by an English gypsum plant. The traveling bridge with its dump car carries a steam boiler,



Illustrating Method of Stripping Used By an English Gypsum Plant.

hoisting engine for operating the car and an air compressor for operating small hand-hammer drills. A broad gauge track gives stability to the structure.

A home-made timber structure with possibly a belt conveyor in place of the car might be constructed at small expense and would probably serve the same purpose to better advantage.



A Tip on Cleaning Gas Producers

Plants using circular water seal gas producers have no doubt often had occasion to wish for an easier method of cleaning the ashes. It is a hard job to say the least to get under the bottom of the producer to clean it. The Don Valley Brick Works, at Toronto, Canada, became so thoroughly disgusted with the old method of cleaning producers that they studied the question until they finally hit upon an idea which they claim does away with an immense amount of labor and unnecessary dirt. A hole large enough for the admittance of a scoop was made close to the bottom of the producer shell and this is fitted with a door and made tight when not used. When it is desired to clean the apparatus this door is removed and the refuse taken out with much less difficulty than by the old method.



Simple Tempering Method

Tempering a drill, cold chisel or other tool properly requires quite a knack, but there is a sure method that requires no skill. First heat the point of the tool to be tempered to a cherry red and then force it into a bar of lead, keeping it there for about half a minute. Then cool it in water. That is all there is to it.

To save the temper of a tool, as for instance an ax in which the handle has been broken off and the stub end cannot be driven out easily, drive the cutting edge of the ax into moist ground and then place live coals around the head. When the wood becomes charred, it can be driven out and the temper in the cutting edge will have been preserved.—*Power.*



Do Not Feed Material on an Idler

Do not make the mistake of allowing raw material discharged from a bin thru a chute onto a belt conveyor to fall upon the conveyor at the point of an idler. A chute should never deliver its load upon an idler since neither the idler nor the belt will endure the pounding received under this arrangement. The proper position for the chute is such that the load will be deposited upon the belt conveyor at a point about six inches beyond the idler.



The machinery for the brick plant to be operated by the Macleay Estate Co. at Gold Beach, Ore., has arrived, and building material for the new store and bank building will commence shortly.



The Pittsburgh American China Co., has been capitalized at \$1,200,000, to manufacture pottery, fire brick, etc. The charter was taken out at Wilmington, Del.

IN *the* WAKE *of the* NEWS

Being a Brief Mention of a Host of Interesting Happenings in the Varied Fields of the Clayworking Industry

Personal

According to reports received, Thomas Carey, millionaire brick manufacturer and democratic politician in Chicago, struck oil on his ranch in Los Angeles, Calif.

William Sprague Carpenter, general manager of the Haggerty Brick Co., died recently at his residence, 2910 Michigan Ave., Detroit, Mich. He was forty-nine years of age.

N. Hermes, who has been out of the clay industry for the past six months, has accepted the superintendency of the Muskogee (Okla.) Vitrified Brick Co. and is back on the job again.

Maurice B. Greenough, secretary of the National Paving Brick Manufacturers Association, has been appointed a member of the roads and streets committee of the Cleveland Automobile Club.

Charles Frank, salesmanager of the Nelsonville Brick Co., of Columbus, Ohio, was called to Maumce, Ohio, during the past fortnight, where a street paving contract was being awarded.

The Ogdensburg (N. Y.) Brick and Sand Co. has engaged Fred J. Paige to take charge of its plant for the coming season. Operations at the above plant were resumed recently and it looks forward to a very promising season.

Will P. Blair, vice-president of the National Paving Brick Manufacturers Association, Cleveland, Ohio, is in Atlantic City, attending the convention of the American Society for Testing Materials, this being the 22nd annual meeting of the Society.

L. G. Blackmer, secretary of the Blackmer & Post Pipe Co., of St. Louis, is in the East on a business trip. After making several stops at various cities Mr. Blackmer will stop over for a few days' rest at Atlantic City. He is expected to return to St. Louis on July 5.

A. B. Luten, president of the Superior Building Supply Co., of Toledo, Ohio, who was also Toledo and Michigan representative of the Metropolitan Brick Co., of Canton, died at his home very suddenly. The funeral was held June 25. Mr. Luten was well known in building and paving brick circles and his loss is keenly felt.

M. M. Morrow, better known as "Bob," who was connected with the quartermaster's department of the army during the war, being purchasing agent for all fuel for the army from coast to coast and also for disembarkation camps, was discharged June 4 and has resumed his duties as salesmanager of the Hocking Valley Brick Co., of Columbus, Ohio.

Leo A. Krueger, president and general manager of the Cleveland Clay Products Co., has left for a tour of the Allegheny district, to line up clay products for the late summer and early fall demand. He will visit all plants in the district, including those at East Brady and Cowanshannoc, Pa., and will be gone a full week. The orders are piling up at the home office at Cleveland, according to Mr. Krueger,

and he wishes to be certain that the producers will be able to fill these orders.

Charles S. Maddock, Jr., of the Thomas Maddock's Sons Co., Trenton, N. J., was elected president of the Local Rotary Club at the annual meeting, June 12, at Hildebrecht's. Just before the meeting, Mr. Maddock, accompanied by his wife, left the city for a trip to Salt Lake City, Utah, to attend the Rotary convention at that place. On the return trip east, they will visit Yellowstone Park.

The need for more care and protection around brick machinery is again emphasized by the untimely death of J. M. Dalton, superintendent of the Durango (Colo.) Pressed Brick Co. Mr. Dalton met a tragic death when in some manner his clothing became entangled in the machinery which immediately wrapped him around a shafting that was revolving at a high rate of speed, and within a few minutes he was whipped and crushed to a bleeding mass; an arm was stripped off, a leg torn away and part of his head crushed and battered. It was only by shreds of clothing found nearby that positive identification could be made. It is not positively known just how he became entangled in the whirling machinery but owing to the length of time he had been employed at the factory, it is evident that it was not unfamiliarity with the plant but due to the catching of his jumper by shafting, that caused his death.

California

The MacConnell Tile Co. was recently incorporated in Los Angeles, Calif., for \$25,000. by Ben S. Hunter, A. R. MacConnell and Mary Twyman.

Kilns are now completed at the plant of the McKnight Fire Brick Co., at Porterville, Calif., and the management has announced that the production of chrome and magnesite brick will be started immediately.

Ernest J. Kump, Fresno, architect, is taking figures for a terra cotta office building, which is to be erected at Dinuba, Calif., by the Alta Irrigation District. The estimated cost of the structure is \$12,000.

Francis Berndt, architectural engineer, of San Francisco, is preparing plans for a six-story brick and concrete apartment building to be erected in the Western Addition. The structure will contain 94 apartments of two and three rooms each. The estimated cost of the building is \$250,000.

The Wilmington (Calif.) Chamber of Commerce, has filed with the Council of that city, a communication which in substance was a protest against the use of cement pipe in the construction of the roadway connecting Terminal Island with Wilmington. The Chamber of Commerce favored clay pipe.

One of the most important events in San Francisco within the last fortnight is the announcement of the erection of a six-story "Class A" apartment building, to be known as the Hillard, at the northwest corner of Washington and Laurel streets, from plans drawn by A. P.

FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

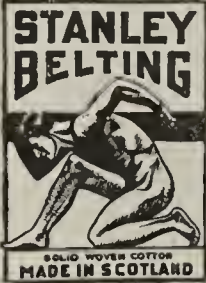
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Rich, Even Tone **YOU CAN'T FADE 'EM** They Go Further—

RICKETSON'S BRICK COLORS

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RICKETSON MINERAL PAINT WORKS Milwaukee, Wisconsin

We Can Save You Time, Money and Trouble on Fire Brick

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Your Prospective Customers

are listed in our Catalog of 99% guaranteed Mailing Lists. It also contains vital suggestions how to advertise and sell profitably by mail. Counts and prices given on 9000 different national Lists, covering all classes; for instance, Farmers, Noodle Mfrs., Hardware Dlr., Zinc Mines, etc. *This valuable reference book free. Write for it.*

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You can produce sales or inquiries with personal letters. Many concerns all over U. S. are profitably using Sales Letters we write. Send for free instructive booklet, "Value of Sales Letters."

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Jacobs. The exterior design is ornate, having red mottled press brick on three elevations, with decorative wrought iron work and bay windows. The building is so designed that each apartment will have an unobstructed marine view. It will contain 15 apartments, 10 of which will consist of a large living room, dining room, reception hall, kitchen and butler's pantry, three master's rooms, three baths and one maid's room. The remaining five contain one less bedroom and bath.

A large force of mechanics are rushing work on the pottery buildings of the Gladding-McBean Co.'s plant at Lincoln, Calif., and it is expected that the main building will be complete about August. At that time, the usual scale of manufacturing will be resumed. Two floors of the large main building are now ready and the pillars are being placed for the third floor. It is understood that the company contemplates an increase of output as soon as manufacturing is in full operation. This concern recently purchased the tile plant of the Cannon-Phillips Co. on the Rancho del Paso, at Arcade, Calif., and it is expected that the San Francisco firm will considerably enlarge this new acquisition. The Cannon-Phillips plant was started several years ago, specializing in hollow tile, for which there is a growing demand.

According to A. S. Baldwin, president of Baldwin & Howell, prominent real estate firm of San Francisco, Calif., building activities should be carried on regardless of the increase in material costs. "Every indication," he says, "points to a continued increase in prices of building materials and labor. Just when the peak will be reached no one can tell. But notwithstanding the fact that prices seem abnormal at present, I am convinced of the fact that they have not reached the high spot yet, nor will they for some time to come. "Under these circumstances Mr. Baldwin strongly advises prospective builders to go ahead with plans, whether for home or investment purposes.

Dealers and manufacturers of brick and other clay products in the San Francisco territory believe that the end of building inactivity has come and are laying plans in anticipation of a renewal in the demand for building materials of this character. The interior towns of California seemed to be among the first to realize the effects of the resumption of normal conditions. Prosperity has reached the farmer this year in a manner far beyond his most hopeful expectations, and plenty of money is in circulation thruout the country districts. In consequence, building plans which have lain dormant for a period of many months, are being picked up once more and put into execution.

Colorado

The Golden (Colo.) Fire Brick Co., has switched from steam to electrical power. The installation of the electric power units will make possible the enlargement of the plant which it is said has become necessary because of the constantly increasing demand for their products. Considerable new machinery is now being installed and new kilns are under construction, which will enable the plant to double its capacity.

The death of F. L. Capers, formerly president, and the resignation of F. L. Capers, Jr., as manager, has caused a change in the entire official arrangement of the Standard Fire Brick Co., of Pueblo, Colo. Wilbur Newton, vice-president of the Newton Lumber Co., has been elected to succeed the late F. L. Capers as president,

while Frank J. Helwig, of Trinidad, will assume the management of the company. Mr. Helwig was formerly general manager of the Standard Fire Brick Co.'s plant but for the last three and one-half years has been manager of the Trinidad Brick & Tile Co. The stockholders of the Standard Fire Brick Co. are: M. D. Thatcher, Raymond C. Thatcher, John H. Thatcher, former Governor Alva Adams, Whitney Newton, F. L. Capers, Jr., and Alva B. Adams.

Delaware

The Okolona Brick & Tile Co., Wilmington, Del., has been incorporated with a capital of \$50,000 to manufacture brick and tile specialties. M. L. Rogers, T. A. Irwin and W. G. Singer are the local incorporators.

Wilmington brick interests report a fair demand for common brick and face brick at the present time. Good hard common stock is selling for about \$20 per thousand, delivered on the job. Salmon brick is quoted at \$17 per thousand. Face brick ranges in price from \$33 to \$44 per thousand, according to selection, the smooth and rough grays and buffs selling at the higher quotation; rough red texture brick is bringing \$34 per thousand. Fire brick and other burned clay products hold firm at existing price levels, with no indication, whatever, of recession. Good fire brick is selling at around \$70 per thousand.

An active local publicity campaign is under way to promote sanitary bathroom fixtures, as well as tiling for this class of service. The Speakman Company, Tattall Streets, Wilmington, Del., handles the well-known sanitary earthenware line of Thomas Maddock's Sons Co., Trenton, and is particularly active in this work; fine displays of fixtures are shown, and convincing arguments used to advance the sale. George W. McCaulley & Son, West Eighth Street, are doing fine work in connection with the promotion of bathroom tile; ceramic tiling is also advanced for mantel work and other features of house work, and to decidedly good ends. This company uses a slogan, "No Job Too Large or Too Small for Us."

The Delaware Terra Cotta Co., Wilmington, Del., is operating its plant at Twenty-sixth Street for the production of common brick, and reports a fair call for material at the present time. With the convenient location of this yard, delivery to different parts of the city is a simple matter, making possible particularly fine service in this connection. The company also handles sewer pipe; this commodity is not manufactured but purchased for re-sale from Pennsylvania interests. There are no labor troubles at the brick plant, and this condition of operation is not causing any concern. The company seeks to employ first grade labor and to accord the men considerate treatment while on the job.

A survey of local building interests shows that conditions are not quite what they ought to be at Wilmington, Del., at the present time. While there are a number of good sized projects "in the wind" actual construction work in the matter of breaking ground and building is backward. The real estate dealers report an active demand for homes of all kinds and existing property is finding ready rentals and sales. The exchanges, also, are numerous, and this phase of the business has but little complaint to make. Two interesting projects now about to be launched cover the erection of a one-story brick addition to the plant of the Charpless Hendler Ice Cream Co., to cost about \$175,000; the structure will be 100 by



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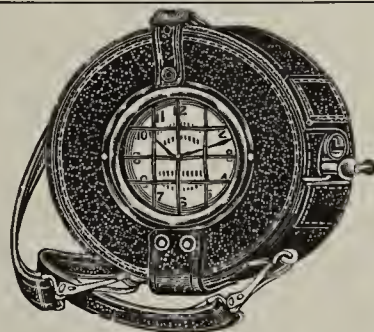
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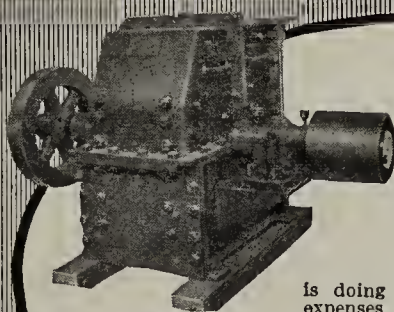
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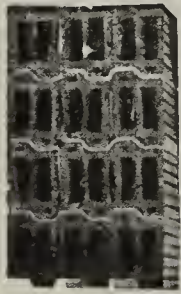
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is doing for others in cutting down running expenses by using less power, let us send you figures on what you want to crush.
 Built entirely of steel with manganese steel linings, the K-B will meet the most severe service requirements.

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is being licensed to manufacturers in the U. S. A. and Canada. It has earned the title of "Popular Tile" because it is easy to make, lay and sell, and is liked by the

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If you are interested in this money making proposition, get in touch with us at once.

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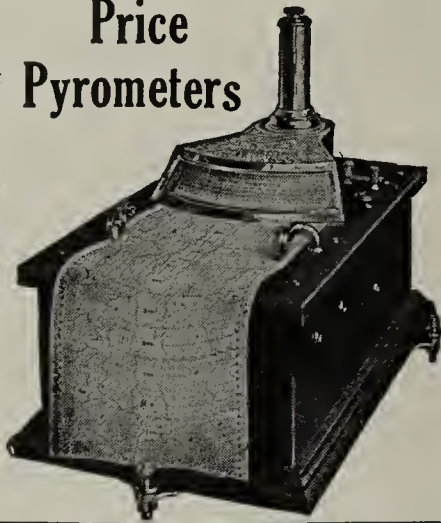
Many plants have improved their ware, saved time and saved lots of fuel with a Price Pyrometer.

Any one of these savings justify a Price Pyrometer on your kilns.

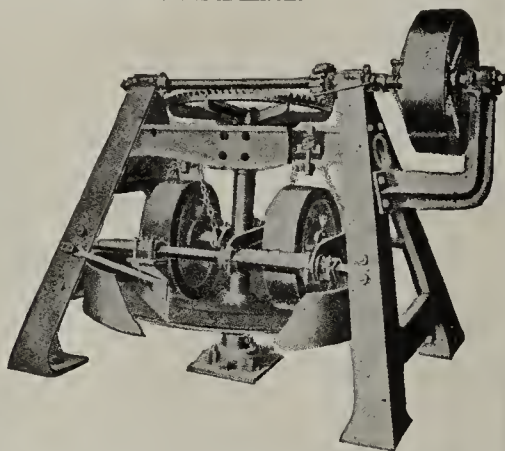
We want to tell you more about them. Write us today.

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CLEVELAND OHIO

Price Pyrometers



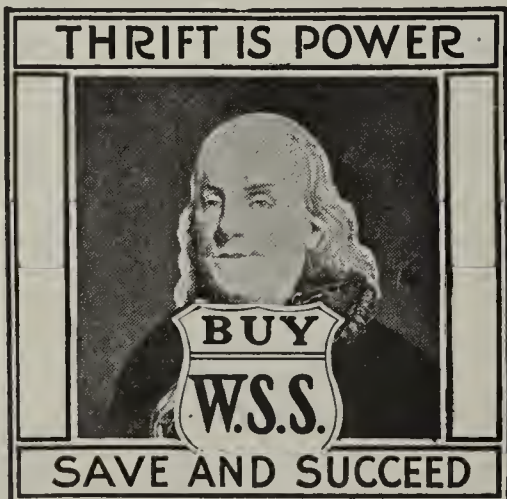
THE EAGLE DRY PAN



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EAGLE IRON WORKS DES MOINES
IOWA

THRIFT IS POWER



100 ft., and three new brick buildings at Selbyville for the Delaware State Institution for Feeble Minded Children. An apartment house to cost \$40,000 of brick construction will be erected by Charles J. Kinhead at Ninth and Washington Streets.

Idaho

The Burley (Idaho) Brick & Sand Co. which is operated by the Pullman Brothers, have built up their plant to such an extent that they have an investment of nearly \$200,000 now and do an annual business of at least \$750,000. About seventy men are employed in the plant. The demand for brick in this vicinity is unusually good and a good season is looked for.

Illinois

It is reported that brick manufacturers in the Joliet, Ill. district have announced a reduction of forty cents per thousand on the price of brick. This is said to be the first drop from the war-time price. Quotations are now \$11 a thousand.

Indiana

Benjamin F. Greek, Helena Greek and Edward F. Kerkhoff, of Lafayette, Ind., have incorporated a new firm to be known as the B. F. Greek Marble & Tile Co. The capital stock is given in the incorporation papers as \$5,000.

Permits have been issued to the Mishawaka Woolen Manufacturing Co., for the erection of a new three-story brick factory building at Mishawaka, Ind. The new structure will be strictly fireproof and modern thruout.

The Farmers' Tile & Supply Co. is the name of a new firm at Kingman, Ind., that has been incorporated under the state laws to engage in the manufacture of clay and cement products. The capital stock is \$30,000 and the incorporators are Alvin M. Ratcliff, Fay E. Cook, Atha Weaver and E. Scott Booe.

A new county infirmary, to be built of brick, will be erected at Rushville, Ind. this summer if the plans of the Rush county commissioners are carried out. The building, which will have a tile roof, will contain living apartments for the superintendent and a hospital and a series of wards for the inmates. The cost of the structure is estimated at \$85,000.

James M. Hoskins, vice-president and treasurer of the Terre Haute (Ind.) Vitrified Brick Co., reports that the brick business has been booming for the last few weeks and says the prospects for the future are exceedingly bright. The company's plant, located on the west side of the river, is going at full capacity every day and there are still plenty of orders ahead waiting to be filled.

A new three-story brick and stone business block is to be erected on the east side of Broadway, between Fifth and Sixth Avenues, Gary, Ind., by John Lincoln and Alexander Eleopolus, proprietors of a string of candy kitchens and ice cream parlors there. Construction will be started as soon as the plans have been completed. The total cost, including the purchase of the ground, will be approximately \$100,000.

Building operations in Fort Wayne, Ind., during the month of May were nearly \$200,000 greater than during the corresponding month of last year, according to the report just compiled by Gustave Lindeman, city building inspector. In May, 1919, 118 permits were issued as compared with only 49 in 1918. The figures show that the majority of the permits were for residences as \$181,304

of the total \$271,478, was for the purpose of constructing new dwellings or remodeling old ones.

May exceeded all records for the erection of new buildings and repairs to old ones in Indianapolis, according to the report of Walter B. Stern, commissioner of buildings. Eight hundred permits were issued during the month and the property involved has a valuation of \$1,156,091. In May, a year ago, 468 permits were issued with a valuation of \$315,522. The permits issued during the first part of June show a continuance of building activity and if the month ends as well as it started out the figures for June will surpass those of May.

Enormous increases in the value of building at Huntington, Ind., this year, are shown by reports compiled by the city building department. From January 1, 1919, to June 15, 290 permits have been issued on property valuations of \$389,815, and in the same period in 1918 only 189 permits were issued on a valuation of \$121,951. For that period permits for the erection of eleven brick and stucco cottages were issued this year as compared with only five last year. Twenty-one two-story brick and stucco houses have been built this year as compared with only eight in 1918.

Kansas

R. M. Godfrey, of Elliott & Godfrey, Rosedale, Kans., reports that business is so fine that they are even refusing orders.

J. W. Bogen, of the Verdigris Valley Vitriified Brick & Tile Co., Neodesha, Kans., reports very good business for his plant. The company expects to increase its market both locally and at nearby points. New machinery will be installed during the coming winter.

Owing to the exceedingly heavy rains near Wichita, Kansas, all construction work has been hampered greatly. Production of brick has been decreased to fifty per cent. of normal and it is feared that complications will arise when building activities again are rushing and the wheat crop is being marketed.

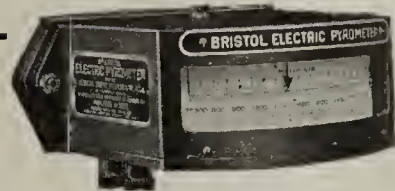
The Humboldt (Kans.) Brick Manufacturing Co., reports very good business. They are at present building a modified Hoffman type, thirty-two chambers continuous kiln and also a twenty-four chamber kiln of the same type for burning hollow tile. They expect to put in a waste heat dryer within the next two or three months.

Louisiana

The sum of \$45,000 is being spent by the Shreveport (La.) Brick & Tile Co. for enlarging its plant. It is said that this concern plans to make its establishment one of the largest brick and tile manufacturing plants in the state. A tract of one hundred and ten acres adjoining the existing factory was recently acquired. During the past this concern has been manufacturing only common brick, but with new machinery which is being installed, it will be fitted for the manufacture of hollow building tile, silo block, drain tile and roofing tile. The present drying sheds are being torn down to make way for sheds large enough to keep the entire plant in operation, which with the new machines means a daily production of 250,000 brick. When completed the new plant will comprise two complete brick factories, operated by electric power, with a kiln capacity of four million brick.

Maryland

Specializing in the sale of fire brick, the Maryland Coal Co., Baltimore, Md., is planning for extensive activities



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For Indicating and Recording are particularly adapted to high sustained temperatures, where the value of entire burns are dependent on correct readings.

They measure up to the high standard maintained by Bristol's Instruments for over a quarter of a century.

Write for bulletin AE-205

THE BRISTOL CO., Waterbury, Conn.

Savings That Pay Dividends

I can save the average Brick Manufacturer enough in fuel to more than pay for my services. And can get him a high grade of ware that will enable him to command a better price than he has been in the habit of getting for kiln run.

Let me prove it. Write now.

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"Good as Ever" after 2½ years' service

On September 7, 1916, we shipped some of our No. 18 Union Steel Chain Belting, which operates on standard No. 88 sprockets, to the Haviland Clay Works, Haviland, Ohio. On March 5, 1919, we shipped them new pins for this chain, and have just received their letter, stating:

"We received the pins and cotters, and after re-pinning the chain, in use so many months, it gives as good service as ever. Your chain fills our needs exactly."

Write us for details which show how these Trouble Proof chains can fill your needs exactly.

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ESTABLISHED 1857

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Clutch Service

Service is a good old word often abused. But when applied to the Caldwell Friction Clutch, it carries all the force of its meaning.

Simple, strong, compact, efficient, the Caldwell Clutch transmits all the power you give it easily, dependably.

One Lever Controls It;
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Absolutely Safe.

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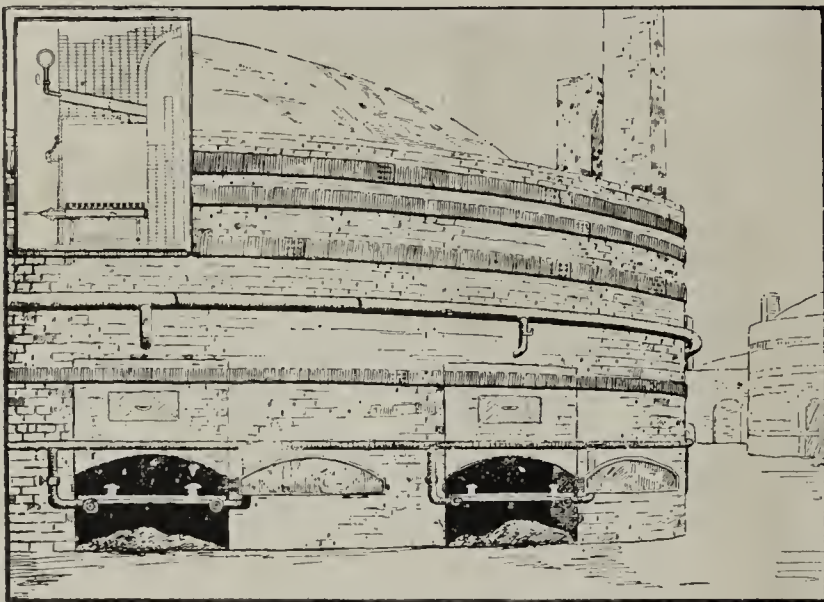
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FRICTION CLUTCHES

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The Furnace Gas Producer

Saves Time—Saves Fuel—Saves Labor.

Summary of Official Tests of Fuel Expert Graham of Dayton, Ohio.

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| 1—Practically Smokeless. | 4—Ability to burn any kind of coal economically. |
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Extract from letter of Mayor Switzer of Dayton, who has the FURNACE GAS-PRODUCER installed under boilers at his factory.

"We believe that you have a good grate and trust that you will be as successful in future installations as you were in this one."

We are installing the Furnace Gas Producer Method for The Crescent Refractories Co., Curwensville, Pa. Ask them. Write for complete data and information.

FURNACE GAS-PRODUCER CO.

J. T. UNDERWOOD, General Manager
DAYTON Makers of "NOSMO" Products OHIO

during the next few months. The company reports trade with the steel interests in this commodity as being a little slow at the present time, and there is evidently a tendency to "hold off" in purchases in the expectation that the price of good fire brick will decline. This is hardly likely in the face of present conditions. Freight conditions are reported as being very good at the present time, with plenty of cars available under ready call.

Construction work is coming around in good fashion and at a fine pace at Baltimore and vicinity. There is no question but that the building movement which has been inaugurated will increase rapidly as the days go by. During the early part of June, or to be exact, from June 1 to 13, the plans filed for work at the building department aggregate \$1,823,669 in estimated valuation. This is more than for the entire month of May, which totaled \$1,612,412, so that June will round out well over the \$2,000,000 mark. Charles H. Osborne, head of this department is optimistic as to the general outlook, and no one is in better position to know exactly what is going on.

The Hudson Cement & Supply Co., Whitmore and Westwood Avenues, Baltimore, one of the largest and most enterprising building material concerns in this section, is handling a representative assortment of burned clay products. These include common brick, face brick, fire brick, sewer brick, paving brick and enameled brick, as well as fire clay, partition tile, terra cotta and clay pipe, and ornamental terra cotta specialties. The company is active in its promotion of material of this nature and enjoys a fine trade. A large quantity of common brick is handled and many varieties of face brick. Samuel A. Ver Valen is president.

Burned clay products are coming into good demand in the Baltimore district. Common brick, face brick, hollow tile, partition tile, etc., are operating under firm call with prices holding strong at present figures. Common brick is now selling at about \$14 per thousand, while selected arch or red stock is bringing \$20 per thousand delivered on the job. Face brick is selling as low as \$12 per thousand to as high as \$100 per thousand; standard material is averaging from \$23 to \$40 per thousand in car load lots delivered on the job; Bradford reds are selling for \$35 and Standard Iron Spots, \$36. Fire brick is selling in the neighborhood of \$70 to \$75 at the present time.

The Home Builders' Section of the Baltimore Real Estate Board is becoming decidedly active in connection with the movement for housing accommodations in different parts of the city. Negotiations are under way with the city officials to extend water mains and make other necessary municipal improvements for the encouragement of new home and apartment construction. In the new Annex district, particular activity is anticipated; this is expected to be one of the leading sections for important housing projects for some little time to come, and no stone will be left unturned to lend all possible co-operation and support to the work. New homes are vitally needed in Baltimore.

With the ever-prevailing controversy regarding so-called present high prices for building materials, it is interesting to note that local interests at Baltimore, in this line, hold that a low level for prices, under existing conditions, has been reached, and that no further drop of any account can be expected. On the other hand, with the rapid resumption of construction work in all parts of the country, the current trend is upwards. It is pointed out that labor wage scales have not decreased to any appreciable extent,

but on the contrary, there have been actual increases. Excepting for the fact that the labor market has become more stabilized, conditions to a large degree are similar to those as experienced during the war period. With this situation, it does not seem possible that prices can decline.

Housing work is taking a prominent part in building circles at Baltimore at the present time. The University Homes Co. has arranged for the construction of 30 residences, each two and one-half stories, at Thirty-ninth Street and Canterbury Road; ten brick and hollow tile apartments to cost about \$300,000 will be erected by the Druid Lake Apartment Co. at Whitelock and Arch Streets; the Guilfords Homes Co. will build 13 two and one-half story residences of brick construction, to cost about \$78,000; and M. Filmore Carter will erect 18 residences on Winder Avenue. Important industrial work at the present time includes a two-story brick addition to the plant of the City Spring Works, to cost about \$50,000 and a new fertilizer works at Curtis Bay, Baltimore, for the Associated Chemical Co., Hagerstown, to cost a like amount.

Massachusetts

According to reports in Springfield, Mass., a scarcity of brick is becoming apparent in building trades. This it is claimed is shown by the fact that no bids were submitted to the city supervisors for estimates on brick to be used for the street and sewer divisions.

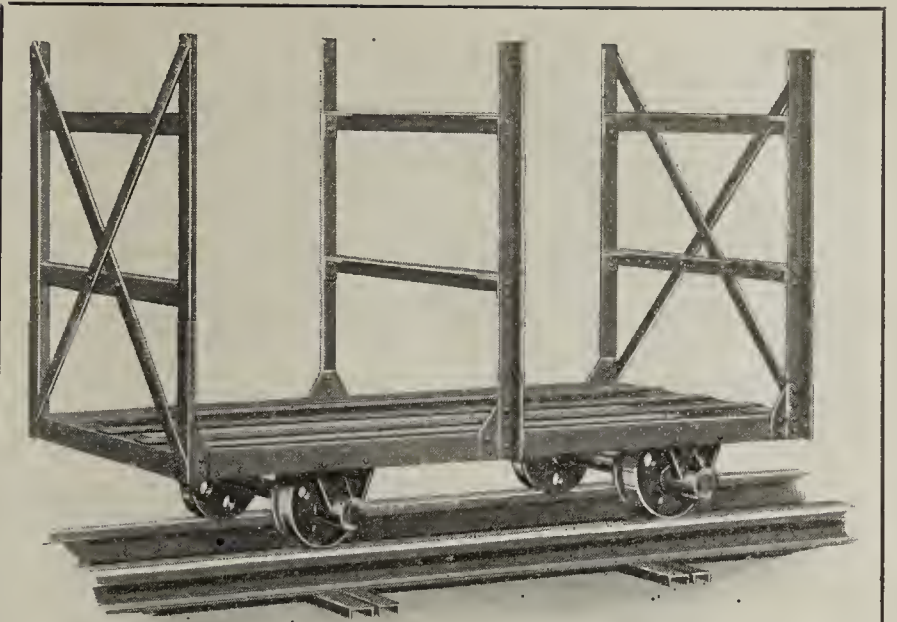
Missouri

Secretary Barry, of the St. Louis Master Bricklayers' Association, speaking on present conditions, said that within the last month there has been "a slight improvement in conditions, and members of the association are reporting more work than ever." There are more bids than ever being placed by contractors, and building is steadily increasing, he said.

A. H. McKelvey, advertising manager of the Laclede-Christy Clay Products Co., says that within the last two weeks there has been a noticeable picking up in business, both in the size of orders and contracts, and of commodities sold. A number of large contracts have been awarded the Laclede-Christy company during the past few weeks, but officials state they are figuring on even bigger work at present. Mr. McKelvey said that the general outlook is better right now than since hostilities ceased.

The Kellerman Construction Co., of St. Louis, Mo., has been awarded a contract to build a large brick boiler house and service building in connection with the new buildings of the Christian Brothers College, in Hi-Point, a subdivision of Hillcrest. The building also will include a wing in which will be located living quarters for engineers and other employees. Almost \$60,000 worth of work is provided for in the contract. Work will be begun immediately.

Builders are discussing with satisfaction and interest the large number of church buildings now in the course of construction thruout the state of Missouri. Never before in the history of the state, it is said, has there been as much work of this character going on at one time. Moreover, several more churches are reported as being planned. Harry C. Kennedy, representative of the Interstate Clay Products Co., in St. Louis, said that to his knowledge 26 large church buildings are going up in Missouri at present. The Interstate company was awarded the chief material contract for six of the edifices. These are being built of hollow tile.



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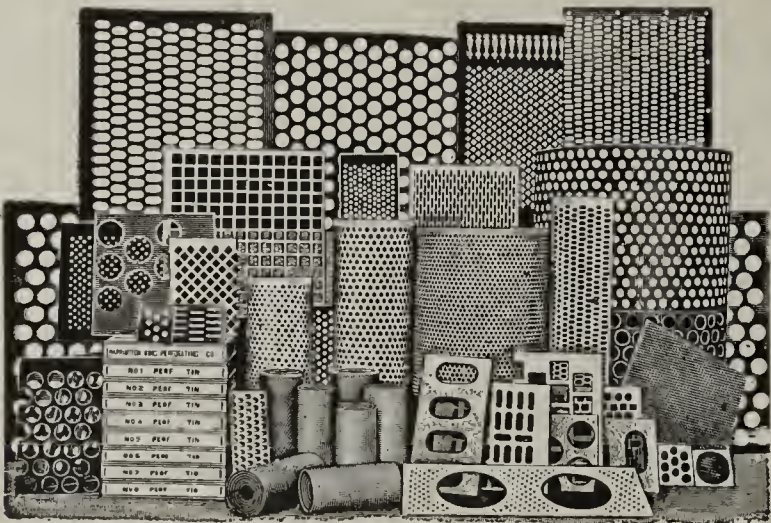
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Durability and Satisfaction**

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You won't have to worry about competition
if you treat your clay with

R. H. Precipitated Carbonate of Barytes

You can safely guarantee that your brick
will be

Scum-Proof

You can get a higher price and influence
architects to specify your product because
Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's de-
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*We have a complete line
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New Orleans, La.

Cincinnati, O.

The recent boom in St. Louis factory building is beginning to be felt by St. Louis manufacturers. Large contracts are replacing small sales to jobbers, which several months ago was the mainstay of manufacturers. Practically all of the St. Louis concerns have benefited from several big industrial building projects launched during the past month. Home building in St. Louis is "non est," but apartments and factories are being planned and erected at a greater speed than ever before. Manufacturers say that they are making a greater number of bids for large supply contracts than ever before in their history.

The Moreno-Burkham Construction Co., a large St. Louis concern, has been awarded a contract at Edwardsville, Ill., by the Madison County Board of Supervisors for the construction of five miles of brick paving on the St. Louis-to-Alton road. The bid is \$165,000. The highway will be paid for from a bond issue of \$600,000, voted by Madison County, and the sum spent for the road will be returned when the Illinois State Highway Commission takes over the road. Officials of the company said that work on the road would be started at an early date. Material contracts have not been submitted, as far as could be learned.

Another project which will bring manufacturers much business, both in the construction of street and the erection of buildings, is forecast by steps taken recently by the City Plan Commission of St. Louis. The commission will present to the Board of Public Service several ordinances for the widening of certain North and South End streets to connect with Twelfth street and form a continuous broad thoroughfare reaching the city limits at both extremes and passing thru the downtown section of the city. One of the ordinances calls for the widening of Gravois avenue from 60 to 100 feet for a distance of 24 blocks. This work would cost the city approximately \$1,500,000. Another calling for the widening of Natural Bridge avenue, would mean more than \$1,000,000 worth of work. The General Motors Co., which is erecting a plant at King's Highway and Natural Bridge avenues, was informed of the latter plan and moved back the foundations for their buildings to conform with it. This work means an additional cost of \$40,000 to the company, which plans a \$7,000,000 investment in St. Louis.

Nebraska

Contracts for the paving of nineteen blocks in Madison, Neb., with vitrified brick, was awarded recently to the Abel Construction Co., Lincoln, the cost being \$3.82 per yard with 70 cents per lineal foot for the curbing. The total cost for the nineteen blocks of vitrified brick paving with a concrete base and asphalt filler will be approximately \$130,000. Work began on this district on June 1st. Bids will soon be opened for the paving of District No. 2, the estimate calling for an additional 16,000 square yards of paving.

New Jersey

The one hundred and fifty-third commencement of Rutgers College, New Brunswick, which stands high in ceramic circles in New Jersey, was held on June 10, with a representative gathering of speakers and guests from different parts of New Jersey, New York, and parts of the East. A number of degrees were conferred, and the entire event celebrated in a fitting manner. The summer session of the Scientific School at the college will be

inaugurated on June 30, covering courses of instruction in many different lines of activity. A large number of students are expected to be in attendance.

Henry Gardner, with plant at Little Ferry, near Hackensack, is operating to the limit of capacity at the present time. Labor conditions locally are not of the best, and with the difficulty in securing proper help there is a current handicap to production distinctly annoying. This plant manufactures a high grade common brick, with average season run aggregating about 5,000,000. It is proposed to maintain this same output during the present year. The stock at the plant at the present time is limited owing to the recent call which has been made, and in this connection, the demand is reported as being exceptionally good.

The big word in the Hackensack brick district is "activity," and this is seen on every side. Real, live-blooded brick production is under way with a vim. The call has come, and the call must be answered, and the quicker it is answered just so much better for the right side of the ledger. After the slack producing season of a year ago, and the off-winter period, local brick manufacturers are coming into their own, and no time is being lost to make this "own" mean something. The strike of the barge men on the Hudson River brick lines has served to increase the demand for the Hackensack commodity, and many thousands of brick from this section are finding their way to Newark and other important points in northern New Jersey. The price for good, hard common is \$16 at the yard.

Burned clay specialties, such as hollow tile, partition tile, drain tile, sewer pipe, and the line, are coming back into their own in different parts of New Jersey. Prices of these commodities show no fluctuation whatever; hollow tile heads the list with prices ranging from about \$120 per thousand to \$400 per thousand, according to size of material and destination, while partition tile runs close from \$100 to \$235 per thousand. The demand for face brick is growing stronger and stronger, with prices ranging from \$31 to \$50 per thousand, an average price being around \$40 for good grade material; light colors, including buffs and grays, are in popular call. Fire brick continues to hold its own under slightly decreased demand, with prices averaging from \$60 to \$70 per thousand, according to quality and location.

There have been no fluctuations of any moment in the prices of common brick, face brick, and other burned clay products in different parts of New Jersey during the past fortnight. Present levels are decidedly firm, and with current aspect they will remain intact for some time to come. With the call for building materials of all kinds rapidly on the increase, there is no apparent reason for a decline in prices. The demand in many instances has gone to deplete stocks, and calls are being made on manufacturers for new supplies. At Newark common brick continues to sell at \$19.50 per thousand, delivered on the job; at Jersey City the price is \$19; at Paterson and Passaic, \$17; at Plainfield \$19; while at Trenton, a point of manufacture the prevailing figure is \$15 per thousand for good, hard common stock. A higher quotation is evidenced in the Atlantic City district, where a price of \$22 is current.

The Perth Amboy (N. J.) Tile Works, is beginning to feel the effects of the revival of construction work, and the well-known floor tile produced by this company are going like "the proverbial hotcakes," to use the words of August Staudt, president. The large stock of material

One of the five ERIE Shovels owned by the Cable Company, Canton, O. Digging a very hard shale, 630 cu. yds. per 9-hr. day.



**"Stronger;
more reliable;
wider range;
speedier!"**

"The ERIE is the best steam shovel on the market today. We have operated two other makes of shovels, but the ERIE is stronger built, more reliable, has a greater range of action, and is much speedier than any other machine of its size.

"We have averaged 630 cu. yds. of hard shale per day of 9 hours."

—A. B. Cable, Pres., the CABLE CO., Canton, Ohio, owners of 5 ERIES digging shale for clay products.

When necessary, the ERIE shovel can be operated very rapidly, to produce a big output. This extra capacity does not cost you anything—it is "velvet."

Investigate the ERIE Shovel. Write for a copy of Bulletin B.

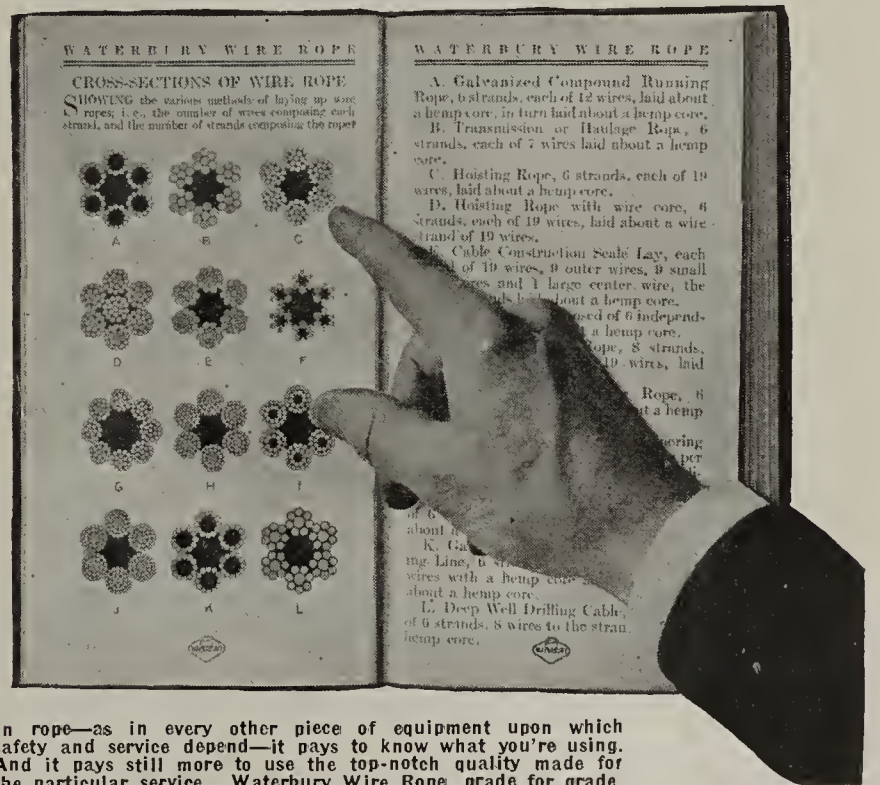


BALL ENGINE CO., ERIE, PA.
Builders of ERIE Shovels and Cranes; BALL Engines.

ERIE Revolving Shovels



WATERBURY WIRE ROPE



In rope—as in every other piece of equipment upon which safety and service depend—it pays to know what you're using. And it pays still more to use the top-notch quality made for the particular service. Waterbury Wire Rope, grade for grade, has no superior in quality, so ANY WATERBURY rope meets that chief requirement. And Waterbury Wire Rope is made in as many different lays and strands as every sort of rope use calls for.

Specify the right rope—the right kind of Waterbury rope—and the service you'll get will be correspondingly satisfactory.

If you wish you knew more about rope, ask for the Waterbury Rope Handbook*.

WATERBURY COMPANY

63 PARK ROW, NEW YORK

Chicago, 1315-1321 W. Congress St.
San Francisco, 151-161 Main St.

Dallas, Tex., A. T. Powell & Co.
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*The Waterbury Rope Handbook will tell you all you need to know about every sort of rope—how it's made, how to splice it—sizes—weights—complete rope data. A copy is free for the asking.

If You Want to SAVE MONEY Here Is A Good Formula

$$C \left(0.98 - \frac{dn}{DN} \right) = \$ \text{wasted per year}$$

where—C = cost of power per year for the given drive, dollars;
d = diameter of driven pulley plus belt thickness, inches;
n = r.p.m. of driven pulley;
D = diameter of driving pulley plus belt thickness, inches;
N = r.p.m. of driving pulley.

If you don't like formulas, do it this way:

- (1) Add diameter of driven pulley to belt thickness, inches, and multiply by r.p.m. of driven pulley.
- (2) Add diameter of the driving pulley to belt thickness, inches, and multiply by r.p.m. of driving pulley.
- (3) Divide (1) by (2).
- (4) Subtract (3) from 0.98.
- (5) Multiply (4) by the cost in dollars per year of power for the drive.

The result is the dollars wasted per year because of unnecessary belt slip. These dollars can as well be saved by simply treating the belt with Cling-Surface.

Cling-Surface primarily stops slip. It also permits easy or slack running, thus permitting a belt to embrace the pulleys through maximum arcs. Hence Cling-Surface treated belts are doubly insured against slip.

Cling-Surface also makes the belt impervious to dampness and resistive to heat, cold, chemical fumes, etc. It reduces internal friction and adds greatly to belt life.

If you are at all interested in saving belt money, you should take advantage of our trial offer. Order a 50-lb. can of Cling-Surface for a 30-day trial. Pay for it if you're satisfied. If unsatisfactory the trial won't cost you a cent.



Cling-Surface Company
1032 Niagara Street
Buffalo, N. Y.

3

which has been maintained for some months past has been exhausted, and the contents of the kilns are practically sold before the tile are cold. This plant is one of the most progressive and enterprising in this district, producing only the highest grade of material. Plans are now under way to increase the output, but this is not an easy matter, owing to labor conditions; good local labor is very hard to obtain at the present time, and to bring about the desired results, calls for the use of labor-saving machinery and devices of all kinds. Installations of this nature will be made at the plant under the supervision of Mr. Staudt, who is as live and progressive as his plant portrays, keeping in close contact with new mechanical appliances and developments that might go to make for plant betterment.

Things are beginning to move in the right way in the Raritan River section. After a period of enforced idleness, the different ceramic plants in this district are beginning to receive heavy calls for their specialties, with the result that more than one plant is working for increased capacity at the earliest possible date. An interesting movement in this vicinity, and one of particular import to local brick, tile and other clayworking factories, is that of deepening the channel in the Raritan, at least as far as Sayreville. It is proposed to interest the Government in this work, and wide possibilities are indicated for this important waterway; among the sections that will be particularly benefited, is Keasbey, where the plants of the General Ceramic Co. and the Didier-March Co. are located. From present appearances, the Raritan Arsenal of the Government, described in a former issue of *Brick and Clay Record*, will be maintained as a permanent institution, and this will likely have a considerable bearing on the contemplated river betterment.

Building conditions at Newark, N. J., are decidedly encouraging. As the first half of the year rounds out, tabulations show an increase of about \$1,500,000 over the corresponding period of a year ago. In 1918, the aggregate construction work between January and June reached \$3,170,000, while during the present year, the rebound in the right direction since April has brought about a total of over \$4,600,000. The early part of June has ushered in a great increase in housing operations, homes of all kinds, including one and two-family dwellings, apartments, flats, etc., are being constructed in all parts of the city. The first three weeks of this month show a heavier movement in this line than the entire three months preceding, while the gross outlay for housing for the first six months of the present year will be more than double that for the corresponding months of 1918. Industrial work, also, is holding up well and a number of important structures of this nature are under way.

If actual building operations mean real activity, as they certainly do, mention of a few projects in different parts of the state shows conclusively the impetus which has been given to construction work in New Jersey. At Atlantic City contracts have been let for a new school building in the Ventnor section to cost about \$70,000; at Montclair, plans are being prepared by the Board of Education for two new brick school houses to cost \$147,000 and \$110,000, respectively; the first noted will be an addition to the Mt. Hebron school, while the second will be an extension to the Manual Arts school. Still another large school building will be erected at Yorkship Village, Camden; this structure will be of brick and terra cotta, and plans have been prepared by Architects Paul & Davis,

SAUERMAN DRAG LINE CABLEWAY EXCAVATOR

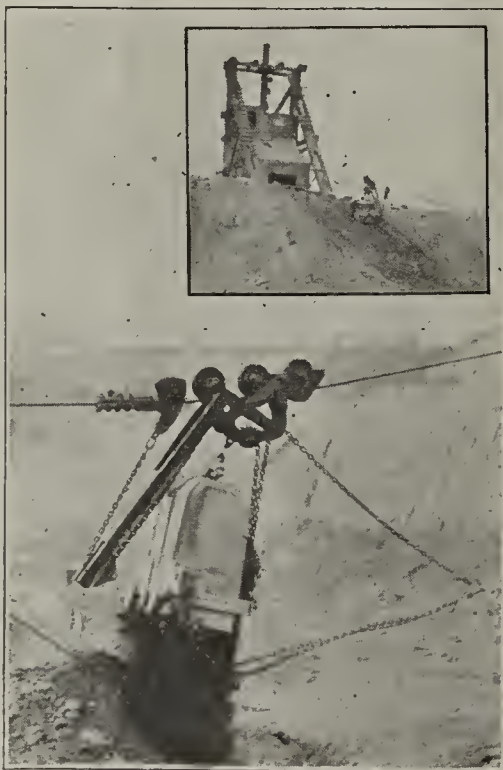
is a one-man machine which connects the clay pit with the plant and digs, conveys and dumps the clay in one continuous operation. It does away with the shoveling gang and the cars, locomotive, track, etc., that are required when other kinds of excavating machines are used.

Here's Example of Economy of Sauerman Outfit in Clay Plant:

The problem confronting one large Ohio brick manufacturer was to find the most economical means of getting the clay from a large hill and delivering to the plant situated in the valley. The method first tried out involved the use of a steam shovel with cars and horses to haul the clay to the plant and required the employment of six to eight men.

The Sauerman outfit which has taken the place of the shovel and cars, digs the clay from the hill and conveys it to a hopper from which a car runs up and down a short incline to the plant. Two men constitute the entire operating force.

The small picture shows the bucket digging a load near the top of the hill. The bucket loads in a few seconds, then the drum carrying the load cable is released by the operator of the double-drum friction hoist on the hill-top and the loaded bucket returns down the track cable by gravity to the hopper 500 ft. away in the valley. The large view shows the quick, sure, automatic dumping action of the bucket.



This low-end dump type of installation has proved to be a perfect solution of this clay-digging problem. Our other type of outfit, dumping at high end of cableway, is equally successful where the clay has to be delivered to a point higher than the place of digging. What is your problem?

Catalog free on request.

SAUERMAN BROS.

316 S. Dearborn St., Chicago

Mfrs. Cableway Excavators, Power Scrapers and Cableway Accessories

1723 Sansom Street, Philadelphia. A new brick, stone and hollow tile bank building will also be erected at Broadway and Walnut Streets, Camden, to cost about \$175,000, by the Broadway Trust Co. At Trenton the Atlas Tire & Rubber Co. will build a new one-story plant on Enterprise Avenue, to cost about \$100,000.

Warren C. King, president of the Manufacturers' Council of New Jersey, and a candidate for governor, has been making careful investigations of workmen's compensation insurance in the state, a subject of particular interest and import to the different brick and clayworking plants. A statement recently made by Mr. King was to the effect that of the \$4,000,000 in premiums paid by employers in the state for workmen's compensation insurance, about \$3,000,000 goes for overhead charges and profits of the insurance companies. The accuracy of this statement was challenged, with the result that Mr. King made careful investigations and received information from the State Department of Banking and Insurance that during the past year the premiums of local employers amounted to \$6,194,901.90, and that the losses aggregated \$1,991,325.51. This shows that more than \$4,200,000 in 1918 went for overhead charges and profits. Mr. King and members of the Manufacturers' Council are active in the movement to have this condition corrected, bringing about an equitable charge to state employers. At the present time, the rates are fixed by the insurance companies and the State Insurance Department without the consulting or the representation of individual employers. This is decidedly wrong.

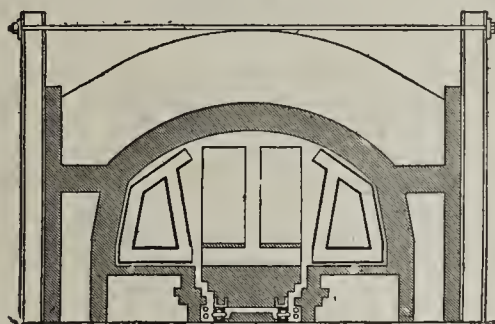
Advancement in construction work continues thruout New Jersey; there is no let-up, or signs of let-up. The building movement that is sweeping thru the country is making its way in all parts of the state. The outlook is most encouraging—everything points to good business for the brick manufacturer, the mason material dealer, hollow tile producer and all other associated interests in the building field. The change that has been brought about since the turn of the winter and the inauguration of the construction movement is nothing short of startling; at Newark, Jersey City, Paterson, Passaic and other points in Northern New Jersey, Trenton, Camden, Central New Jersey and the shore resorts, similar conditions prevail—the wheels have commenced to turn, and at no slow pace. The building work now developing is of all varieties, with apartments and dwellings taking the lead; at the same time school buildings and public structures are forging to the front and industrial enterprises are not far behind. The call for brick and other burned clay products is strong and growing stronger; common brick and face brick, as might be expected, are in big demand, and production will have "to step" to keep up with the drain on the supply. The manufacturers know it and are arranging their plans accordingly. And so, all along the line, former discontentment, well justified, is giving place to evident satisfaction.

New York

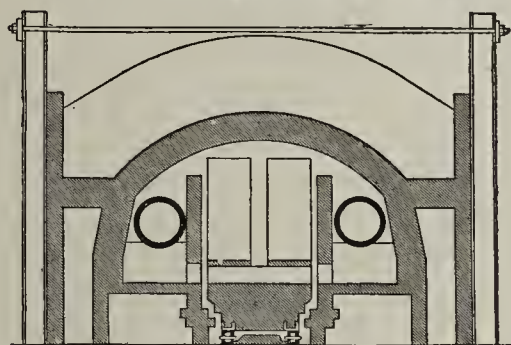
Operations will be commenced for the first time in two years by the Moore & Babcock Co. at Albany, N. Y. It is said that the strike of barge captains will not affect the building construction in Albany.

The Hydraulic Stone Corporation, Brooklyn, N. Y., has been incorporated with a capital of \$20,000 to manufacture brick and various ceramic wares. M. E. Jenkins, F. Knauss and A. L. Carroll, 188 Adelphi Street, are the incorporators.

THE KILN OF SURE CONTROL



♦ DRESSLER ♦ TUNNEL KILN



American Dressler Tunnel Kilns,
Incorporated
171 Madison Ave. New York



Bituminous COAL Particularly Adapted To Burning Clay Ware

INDIANA BLOCK

Three Operations in Clay County, Indiana, on Monon R. R. Capacity, 3,000 Tons per day.

INDIANA Number 4

Three Operations in Green County, Indiana, on Monon R. R. Capacity, 3,000 Tons per day.

Both burn with long flame, are very low in sulphur, and leave a flaky ash.

Tell us your requirements

POWER COAL COMPANY

FISHER BUILDING :: :: CHICAGO

Traction Building, Indianapolis, Ind.
Terre Haute, Ind.

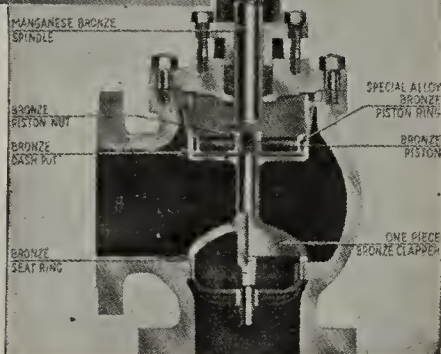
**Automatic
Stop and****Equalizing
Check Valve**

Know genuine
Jenkins Valves by
the Jenkins' "Diamond
Mark".

To Equalize Pressure and as a factor of safety install Jenkins Automatic Equalizing Stop and Check Valves.

They equalize the pressure between the different boilers in a battery, preventing one boiler from working at a lower pressure than another. Their design also permits an automatic action that shuts off the flow of steam from the header to the boiler in case a tube should burst or other internal rupture occur, thereby suddenly reducing the pressure in that boiler.

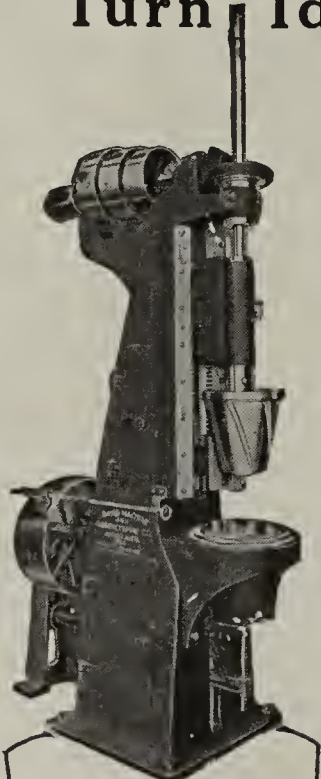
JENKINS BROS.
New York Philadelphia Boston
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Jenkins Valves

20 9-J

Turn Idle Hands into Producers



Flower Pots
Runner Brick
Stone Ware
Insulators
Crucibles
Sleeves
Nozzles
Etc.

Every delay caused by machine adjustments means idle hands—money loss to you. Why not put this idle help to work, making Flower Pots, Runner Brick, Stone Ware, Crucibles, etc., on a Baird Pottery Machine? Any laborer can operate it. Machine takes little room.

The experience of users throughout the country, as well as data showing how you can profit by its use, is yours for the asking. Send along a sample of your Clay.

Baird Machine & Mfg. Co.

265-69 Jefferson Ave., E.,
Detroit, Mich.

The Lehigh Fireproofing Co., New York, has been incorporated with a capital of \$10,000 to deal in hollow tile and other fireproofing materials. M. N. Ahern, A. R. Bloomgarden and J. Bardsley, Sedgwick Avenue and Kingbridge Road, Bronx, are the incorporators.

The rate of production at the different Hudson River brick plants is considerably below normal at the present time, with the big factor in the situation covering existing labor conditions. It is said that in one district alone only one-fourth of the 100 plants are in operation.

Brick prices in New York show no change, or any trend towards change. Hudson River common is selling for \$15 per thousand, alongside dock in wholesale lots. The arrivals during the past few weeks have been light owing to the strike of the barge captains. It is said that to relieve the condition some of the prominent manufacturers have devised a plan to help the local builders who are compelled to suspend operations thru inability to secure brick; these builders will be asked to call at the docks for their supply, with the cost to be defrayed by the particular manufacturer.

Face brick continues to operate under good demand in the New York district. There is no change in prices, nor is there likely to be for some while to come. Reds, rough and smooth, are selling at \$37 per thousand, delivered on the job, while buffs and grays are bringing \$42 and \$45 respectively. The situation is encouraging but for one distressing factor, and that—freight. The call for the material is strong and increasing, the supply is ready at the plants, primarily in the Pennsylvania districts, and cars are available for moving, but delivery is the trying task. Shipping instructions to certain destinations and points have seemingly no meaning to the railroads; they deliver, or leave the cars, at a point which suits them best, and the brick man pays the costs of hauling to the desired locations. Hollow tile, drain tile and other burned clay products show no fluctuation in price and are operating under firm, encouraging call.

In connection with testimony given before the Joint Legislative Committee, New York, which is conducting a series of hearings covering the existing prices of building materials of all kinds, William K. Maxwell, treasurer of the Long Island Brick Co., Farmingdale, L. I., has made some interesting and pertinent statements regarding the situation. In speaking of current production costs, he said that the price of brick today was entirely dependent upon the cost of manufacture; that if such were to be fixed by the ordinary economic laws of supply and demand, the price would be considerably higher than at the present time. Dealing with the labor problem, he pointed out that his company was unable to get sufficient men to operate the plant at full capacity. "I will take 50 to 200 men," he said, "and pay them 50 cents an hour for an 8-hour day, and if they want to put in 18 hours a day they can. Labor that you pay 50 cents an hour for and get 25 cents work out of makes manufacturing costs pretty high, and that class of labor does not stick."

With New York's proclivity for doing things in a "big way" or not at all, building activity is still on the increase; there is seemingly no limit in sight as to the projects to be placed under way, reaching from hotel buildings, theaters, schools and industrial structures to apartments, homes and general housing work. Taking the New York and Northern New Jersey section as a unit, there is about \$7,000,000 worth of construction work in sight at the present time, and this is being enhanced

from day to day. The architects and engineers are busy, brick and other burned clay interests are feeling the pressure and the mason material and other dealers in building commodities are deriving the benefits of the movement. Brooklyn continues to lead in the volume of construction work, and the total estimated costs of permits taken out at the building department for the month of June are well on to \$10,000,000. To appreciate what this really means one must compare it with the record of months in the year gone by—the contrast is startling. Brick, quite naturally, is the popular material and many important structures using this commodity are under way or planned for immediate action. Among these are a telephone exchange for the New York Telephone Co., at Liberty Avenue and Milford Street to cost \$220,000, employing face brick in erection; a theater for the Avondale Realty Co., at Kings Highway and East Twelfth Street, using red face brick with limestone, to cost a like amount; while the Sunrise Holding Co., will build ten two-story brick dwellings on Sixty-fourth Street, to cost \$120,000.

North Carolina

K. S. Tanner and R. M. Williams, both of Rutherfordton, and J. F. Alexander of Forest City, have incorporated the Bostic (N. C.) Brick Co., with an authorized capital stock of \$125,000.

Ohio

It is said that the Consolidated Clay Products Co., of Cincinnati, Ohio, has increased its capital stock from \$1,000 to \$3,000,000.

The Beaver Coal & Clay Co., of Cleveland, Ohio, has been chartered with a capital of \$500 which will soon be increased to a larger amount. The incorporators are H. A. Couse, L. C. Shields, V. J. Warren, C. Harrington and M. Anderson.

The Emanuel Maurer farm, east of Millersburg, Ohio, was recently purchased by the Sugar Creek (Ohio) Clay Products Co. for the sum of \$30,000. The farm consists of one hundred and nineteen acres, most of which is underlaid with a four-foot vein of coal and clay.

Improvement in the housing conditions in Columbus, Ohio, is noted from week to week. There is less demand for homes since the building campaign has been under way. Realtors and builders are still renting property which is under construction, showing a good demand for dwellings and apartments.

Bids will be opened July 11 by the Ohio Highway Commission for about 40 road improvement jobs, among which are a number of brick paving projects. The plans call for the use of brick on a road in Ashtabula County, one in Columbiana, another in Hancock, one in Mahoning, and several where bids will be taken on either brick or macadam.

The Windsor Brick Co., Grant and Morgan Sts., Akron, Ohio, experienced a \$10,000 damage due to fire resulting from carelessness on the part of an employee. The gas producer house, a well equipped building, and the coal hopper building were practically burned to the ground. The failure of the man in charge to properly close a coal hopper is supposed to have been the cause of the fire.

Prison-made brick will be used in paving a stretch of a mile and a half of the Columbus-Sandusky road, starting at the north corporation line, during the present summer.

INSURANCE AGAINST FIRE At Actual Cost

The Manufacturers of Clay Products at Reciprocal Insurance Bureau, offers you an opportunity to come in and insure against fire with preferred risks that are of your own class and engaged in the same line of business. This Bureau saves you the expense of paying for (1) enormous overhead, (2) agents' commissions, (3) companies' profits. You are assured of greater safety, co-operative assistance of a practical kind, and better service.

A large Brick and Tile plant owner writes:

"We can truthfully say we have never had more prompt and satisfactory adjustment of claim than in this case."

Write us for rates and our plan to render better service and greater safety.

**Manufacturers of Clay Products at
Reciprocal Insurance Bureau
29 S. LA SALLE ST., CHICAGO**



Light steel rails

We saved the day for the Clay and Coal Operators in War Times by furnishing BUCKEYE MINE RAILS, whenever and wherever needed, and while many other Steel Mills were running exclusively on other material, you could not have operated without us at that time.

Now, in Times of Peace, we ask that you do not forget us, as we can, and will render the same unexcelled service, and furnish the same high quality of material. "Buckeye means best", and BUCKEYE LIGHT STEEL RAILS are better still. All sections from 12 lb. to 40 lb. inclusive always in stock for quick shipment.

Let us have your inquiries, and we will take the chance of developing them into orders on our books.

**THE BUCKEYE ROLLING MILL COMPANY
STEUBENVILLE, OHIO**

"We have been using at our two factories for the past year, Barium Carbonate made by the Rollin Chemical Company. This material is used to prevent scum and has proved entirely satisfactory."
THE UNITED STATES ROOFING TILE CO.
 5-15-18

IMPROVE YOUR WARE

It can be done by the use of Rollin's Barium Carbonate because it eliminates scum.

Just add it to your clay at the pug mill or dry pan and it will make the scum-producing salts insoluble and harmless to your ware.

Write us now.

The Rollin Chemical Co.
 Charleston, W. Va.

BRICK MUST HOLD UP ITS REPUTATION

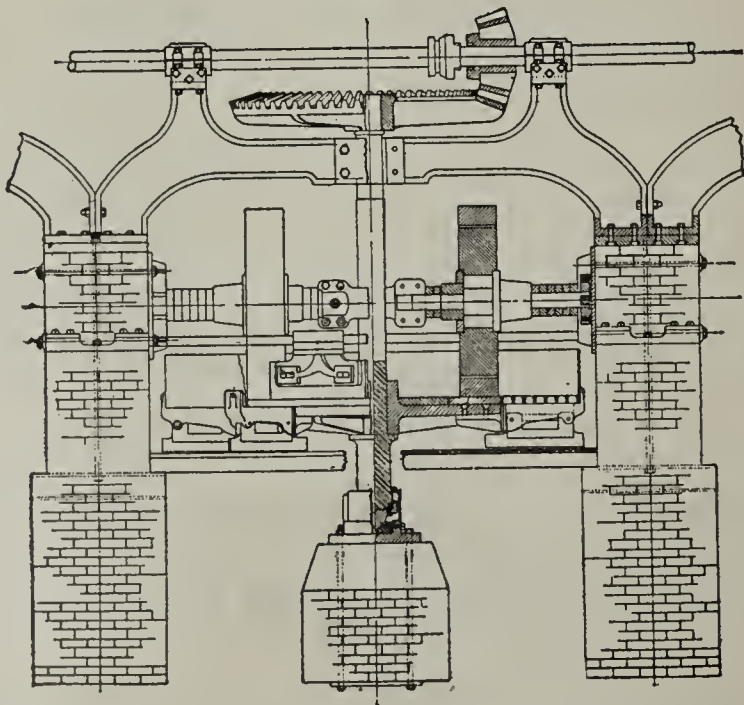
The "MEANS" 9 Ft. Dry Pan

is being chosen for the reduction of clay and shale by successful claymen because careful comparison with other makes, and records of their performance, show the "Means" to be the best.

Special features are the improved step and toe, and adjustable bearings.

In addition to dry pans we manufacture all equipment required in sewer pipe and tile plants, and our special goose-neck attachment for the sewer-pipe press affords a means of making brick directly from the press. Write us.

The Toronto Foundry & Machine Co., Inc.
 Toronto, Ohio



Contract for the work will likely be awarded soon and it is expected to start work at once. The improvement calls for 18,297 square yards of brick surface which is approximately 732,000 brick. These brick are being manufactured at the state plant at Junction City, Ohio.

Face brick in central Ohio territory has advanced in the past month on an average of about \$3. This is true of practically every make. The advance was necessary, because of the scarcity of labor and the higher cost of production. Face brick are now quoted from \$26 to \$32 in this territory. Common brick has not advanced recently but there is every indication that an advance will soon be forthcoming. Common brick is priced from \$13 to \$16.

There was no difficulty on the part of the majority in the Ohio legislature in lining up sufficient votes to override the governor's veto of the emergency finance bill. Both houses voted to pass the bill over the veto and it becomes a law in the near future. The emergency bill provides that municipalities and other political divisions in the state can disregard the Smith one per cent. law and issue bonds with which to carry on needed public work. There will be considerable public work started soon since the financial questions have been straightened out. The brick business will benefit by the passage of the emergency act.

Building operations in Columbus, Ohio, continue to improve. This is shown by the records of the city building department which indicates a constant increase in construction work, especially in home building. During the week ending June 21, the department issued permits for \$171,060 new work which is larger than any previous week for the present year. One of the best features is the fact that 25 permits issued during the week were for dwellings. In addition quite a few contracts for homes in the suburbs, which do not come under the jurisdiction of the building department, were closed. Construction work for the year so far amounts to \$2,441,310.

One of the best features of construction work thruout Ohio is that of the building of school houses. A contract was awarded recently to a Columbus concern for the erection of a \$83,100 school house at Pittsburgh, Darke County, which does not include plumbing and heating. Two buildings are under process of construction in Fayette County and bids are being taken on two buildings in Green Township, Fayette County. These will cost about \$40,000. In addition plans are being made for a \$60,000 school at Alexandria, Ohio, and a \$90,000 building at Mechanicsburg. Another building or rather two structures will be erected at Bucyrus, to cost \$300,000.

Pennsylvania

The Philadelphia Terra Cotta Co. reports conditions as being a little unsettled at the present time, with not "much doing" in the way of strong call for its specialties. Mention is made of the impetus that will be given to the local situation if the city carries out its plan for a \$14,000,000 fund for construction enterprises. As the season advances it is expected that things will take a turn, bringing a brisk demand for terra cotta and allied products.

The Robinson Clay Products Co.'s plant, located on the Beaver River at the entrance of New Brighton, Pa., was completely destroyed by fire of unknown origin recently, entailing a loss of several thousand dollars. It is believed that the fire originated at one of the kilns, and

the flames spread rapidly to three small frame buildings, destroying them entirely and burning up a huge coal pile consisting of forty tons of fuel. The loss is covered by insurance.

An interesting bill has been signed by Governor Sproul of Pennsylvania, establishing a bureau of topographic and geological survey in the Department of Internal Affairs, under a state geologist to be appointed by the secretary of such department, who will also fix his compensation. The new bureau will succeed the state geological and topographical commission, organized about 20 years ago, and will have the fundamental duty of making a survey of the state to determine the location of clays, oil, coal and other useful minerals. Another pertinent bill now passed by the House and soon to be presented to the Governor for signing is designed to end rent profiteering, allowing tenants of property to appeal to the Common Pleas Court when landlords seek to obtain exorbitant rentals.

Brick manufacturers and dealers in burned clay products in Philadelphia are beginning to feel the effect of the increased activity in local building work, and the call for high grade specialties is coming stronger and stronger. Prices maintain strong at existing levels, there is hardly a thought given to the matter of any decline in present quotations, and it is unlikely that there will be any fluctuations of any moment for some time to come. Common brick is selling at about \$17 per thousand for good grade material, delivered on the job. Face brick is coming more and more into prominence, with prices ranging from about \$38 to \$45 per thousand for the different varieties, delivered on the job. Fire brick is holding its own, with current quotation for first grade material at about \$70. Hollow building tile, drain tile and kindred products are selling well under good prices.

In the Pittsburgh district a sudden sentiment for higher prices has made itself manifest in the past two weeks. Manufacturers with plants in and about the city who are making red brick at \$24 a thousand are talking very determinedly of a \$2 advance. To date it has not taken definite shape, but the likelihood is that it will. Almost all these plants have more business than they can well handle and that is made the basis of the projected advance. For 60 days now that has been the situation in Pittsburgh. A scattering of tiny building booms in isolated sections of Western Pennsylvania are using up the local brick output. Pittsburgh dealers in face brick have got beyond the stage of merely talking about an advance. Several Pittsburgh offices issued new price lists in the last week of June, effective July 1, making advances of approximately \$1 a thousand. Their prices recently have been ranging about \$27 or \$28 a thousand, with some instances of higher figures.

As a result of the work of the Master Builders' Exchange, Philadelphia, Pa., O. W. Ketcham, president, has made an announcement that all questions affecting labor in the building trades, such as wages, working conditions, etc., have now been practically settled, and to the general satisfaction of those concerned. The agreements provide for a standard wage scale, with guarantee to the person planning for a building that the structure will not be left uncompleted. In connection with the advantages to be derived, it is pointed out that the spirit of toleration displayed by both sides in adjusting their differences is worthy of attention, and furnishes an example to other cities where strikes and lock-outs in the building trades are almost monthly occurrences. "Direct arbitra-

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Our engineers, experts in the art of designing chain drives, will gladly call and assist in solving any power plant transmission problem without obligation.

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BUY A DURABLE, FIREPROOF DRYER

GET A DRYER THAT

Operates economically—using live or exhaust steam.

Recirculates the air fully.

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Dries the material as it SHOULD be dried.

Delivers the highest quality product.

In other words, when you buy a dryer, get a dryer made by scientists and experienced specialists.

Proctor for **ALL CLAY PRODUCTS**
DRYERS

When You Need a Dryer, Buy a Proctor Dryer.
Backed by a service record of 35 years.

THE PHILADELPHIA TEXTILE MACHINERY COMPANY

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Hearst Building

PROVIDENCE, R. I.

Howard Building

CHARLOTTE, N. C.

Realty Building

HAMILTON, ONT., CAN.

W. J. Westaway, Sun Life Bldg.

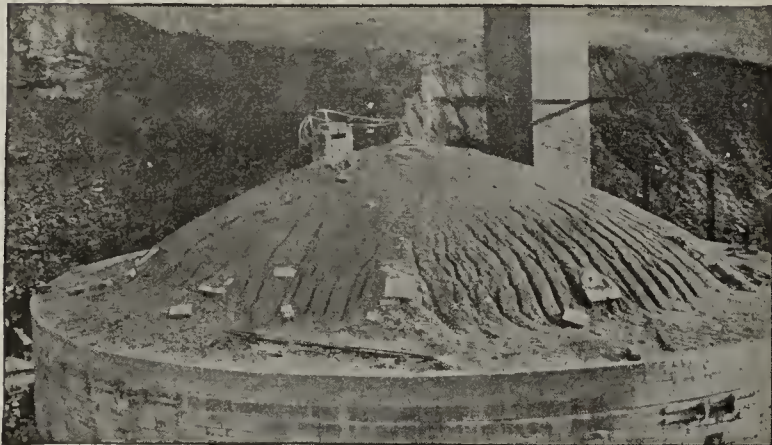
THWING

HIGH RESISTANCE MULTIPLE RECORD

PYROMETERS

in

Brick Plants



Typical Location and Housing for Thwing Thermocouple on a Brick Kiln

A Typical Instance of What They Are Doing

The Hocking Valley Brick Co., Logan, Ohio, has been using Thwing Pyrometers for the last two years in 30 kilns in which shale paving brick is being burned at from 2,050 to 2,100° F. The permissible range is from 40 to 50° when on high fire, but the temperature then seldom varies more than 25 to 30°.

The use of the Thwing System here has resulted in a saving of both time and fuel, and previous trouble from overheated kilns has been reduced to a minimum.

During the entire two years only one thermo-couple has been renewed, this renewal being necessary only because of damage in a storm. The whole Thwing Pyrometer System has proven thoroughly reliable, has stimulated the firemen to more careful efforts, and since the extreme shortage of labor has been of the greatest value in getting good work from inexperienced men.

Equally satisfactory performances which we could cite by the hundred would not be half so convincing as a trial in your own plant. Let us submit you interesting data and costs.

THWING INSTRUMENT CO.
3336 Lancaster Ave. Philadelphia

tion between employer and employe," Mr. Ketcham says, "is the only method of creating a harmonious regard for one another and a willingness to abide by the agreements consummated."

Housing construction is on the upward trend at Philadelphia, closely followed by industrial enterprises. There is an air of decided encouragement in building circles and while large projects are moving along a little too slow to suit some of the local building interests, there is really "little kick" coming when one considers the substantial turn of the tide during the past few months. Brick holds the center of attraction as the basic building material, and the call is strong for a number of new buildings of various character. The Hess-Bright Mfg. Co. has plans under way for the erection of a two-story brick addition to its ball bearing manufacturing plant at Front and Erie Streets, to be about 40 by 100 ft.; the Windsor Mfg. Co., will build a three-story brick factory at Butler and Jasper Streets, 63 by 250 ft.; at the League Island Navy Yard, the Bureau of Yards & Docks has taken bids for the construction of a new pattern shop to cost about \$700,000. Oscar J. Gissell & Co., 4826 North Broad Street, is having plans prepared for the erection of 27 brick dwellings at Wyoming Avenue and Roosevelt Boulevard; Judson M. Zane, Land Title Building, will build 22 brick houses, each two and one-half story, at Springfield Avenue, near Lincoln Drive; and 24 two-story homes will be constructed at Marvine and Courtland Streets by John F. McGinty. The Midvale Steel & Ordnance Co. is planning for extensive additions and improvements at its Cambria works, Johnstown, Pa., to cost about \$14,000,000; in connection with this work it is proposed to build a series of about 2,000 houses for employes at the plant.

Texas

Building operations in Dallas, Tex., are at a standstill because of a sympathetic strike of building trades unions, whose members walked out in sympathy with striking linemen of the Texas Power & Light Co., who have been on strike for several weeks to enforce demands for shorter hours and wage increase; eleven unions, with a membership of more than 3,000 men, are on strike, and about \$2,000,000 worth of buildings operations are at a standstill.



Britain Expects Far to Surpass Military Achievements

The American Chamber of Commerce in London reports that the civil aeronautical position in Great Britain is hailed by the British press as being "far more advanced than in any other country."

When General Seely, under secretary for air, presented the air estimates for 1919-20 to the House of Commons recently, premier emphasis was laid on the appropriation of 3,000,000 pounds (\$15,000,000) for civil aviation research and experiment.

A mail service from Cairo to India is definitely to be inaugurated. The air route has already been surveyed, and the route from Cairo to the Cape is being surveyed.

Both in the British Isles and in the possessions aerodromes are to be established at suitable spots with full equipment of meteorological instruments, sound and light signals, balloons and aerial bouys, wireless telegraphy and telephone equipment.

Already "cargo planes" are in sight. A huge British seaplane of novel type, equipped with five Rolls Royce motors,

has already been flown carrying six tons at 100 miles per hour. Another with a carrying capacity of nine tons is being experimented with.

The remarkable British military achievements in the air are expected to be completely eclipsed by the development of the airplane as a commercial and economic factor.

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British Wage Rate Increase

A general review in the British "Labour Gazette" of the rise in rates of wages since the outbreak of the war, places the average increase at between 100 per cent. to 120 per cent. on prewar rates, exclusive of hour and piece rate increases of certain industries; the average increase in building trades is placed at about 100 per cent.; in mining at about 110 per cent. to 120 per cent. on prewar average wages of all classes of workers; in iron and steel manufacture, engineering and shipbuilding and other metal trades, between 100 per cent. and 120 per cent.; in textile trades, between 100 per cent. and 110 per cent.; in agriculture, average for all classes is 88 per cent.

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Over Two Millions Increase in Toronto Building Permits for This Year

The returns of the city architect's department, Toronto, Ont., for the month of May, 1919, show an increase in the value of the buildings erected for the year to date, over the same period of last year, of \$2,248,999. There were 311 more permits issued during the month of May this year than last year, and the total value for the month is \$1,455,734, being an increase over the month of May, 1919, of \$578,226. The total figures are as follows:

	1919	1918
Permits issued	929	618
Erections	1,146	757
Value	\$1,455,734	\$877,508
Value of business for year to date.....	4,983,950	2,734,951

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Poor Housing Means Big Labor Turnover

The labor turnover in Niagara Falls, N. Y., in 1917, in plants employing 5,249 was placed at approximately 13,600 employes or an average of 260 per cent. This percentage, applied to the total number of employes which it is estimated are engaged in industrial work in the city, would mean that the total labor turnover in the community in 1917 was about 38,000 persons.

It is the belief of a Housing Committee whose members have carefully studied conditions that a labor turnover reduction of up to 25 per cent. might be effected if the housing conditions were first class. This committee found that it had been difficult to attract the right kind of labor, that many men have refused to stay in the city because of inability to secure proper houses or adequate boarding facilities and that a reasonable proportion of the high and costly labor turnover has been due to insufficient housing.

If 25 per cent. of the present turnover, as was estimated, could be reduced by excellent housing conditions, it would mean a saving of about 10,000 employes. If the cost of turnover per employe averages the conservative figure of \$50, the saving to employers in Niagara Falls resulting from good housing would amount to something like \$500,000 a year.

As a result of these investigations, the Niagara Falls Cham-



Being isolated makes no difference to a Pulsometer



—and the last "leg" of the journey was over 256 miles of driven, drifted snow by dog sled—

—and there they are, a battery of Pulsometers, isolated in the wilds of British Columbia, shut off from the world in a land of grizzly bears and catamounts.

The Lightning Creek Gold Gravel and Drainage Company had to have a pump that didn't need a "base of supplies," a pump that they could take up there, miles from civilization, and give it every-day service, 365 days a year. They couldn't take any chances, that's why they took the Pulsometers.

But why not?

—steady service doesn't "wear" on a Pulsometer—nothing about it to wear out, no glands, no rods that need packing, no pistons or piston rings—

And because there are no contacts, no sliding parts, there is no wear—years of service don't decrease the efficiency of a Pulsometer—

Does it need oil? NO.

—certainly not. Why should it need lubrication when there is no friction caused in its operation?

About all you have to do is rig up a Pulsometer, any place, turn on the steam and let it PUMP, and it doesn't stop at throwing water with 40% solid matter.

Pulsometers have been made for more than half a century—over 154,000 of them have been sold—let us show you how you can use one.

PULSOMETER STEAM PUMP CO.

Executive Offices: 224 W. 42nd St., New York City

Agencies in all the principal cities

Boston: 391 Atlantic Avenue.

Hattiesburg, Miss.: Care of J. L.

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Philadelphia, Pa.: 235 Commercial

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San Francisco, Calif.: 139 Townsend

Street.

Cincinnati, Ohio: Elm and Pearl

Streets.

Minneapolis, Minn.: 400 Temple Ct.

Milwaukee, Wis.: 206 Wells Street.

Cleveland, Ohio.: 1227 West Ninth

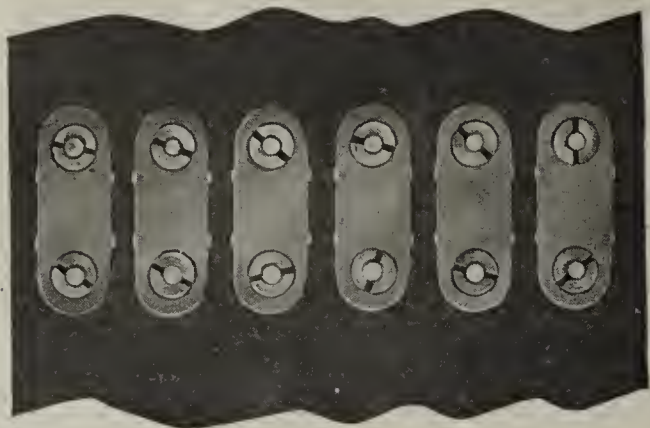
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F. H. Hopkins & Co., Montreal, Quebec, Canada.

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Reinforce Your Conveyor Belts With This Steel Joint



Conveyor and elevator belts are under a terrific strain that constantly seeks to tear them apart. The greatest weakness is at the belt joint.

"High Duty" Fasteners

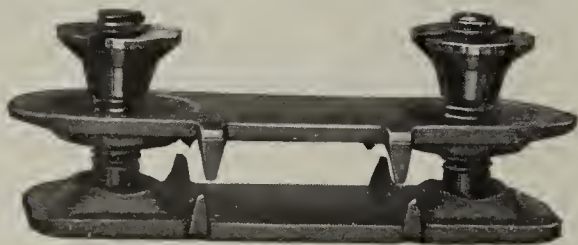
—the all-steel conveyor and elevator belt fasteners, are built to withstand the heavy strain of maximum service.

"High Duty" Fasteners make a joint of exceptionally high tensile strength—a joint that is smooth on both sides and evenly balanced.

They are designed and made only in size for heavy belting from $\frac{3}{8}$ " upwards in thickness.

A big belt costs real money; the "High Duty" joint is not made for general service—it is made to give utmost efficiency in the special field where your large belts operate. Its use will give increased belting service to repay its modest initial cost and the reasonable time required for installation.

Write for complete information.



Flexible Steel Lacing Co.,

Also Manufacturers of Alligator Steel Lacing and
Flexco-Lok Lamp Guards

Dept. HD 32, 522 S. Clinton St., Chicago, Ill.

ber of Commerce has taken steps to establish a housing corporation which would help finance the erection of dwellings in the city. According to estimates 10,000 will be needed within the next ten years.

✱ ✱ ✱

St. Louis "Own Your Own Home" Movement

The \$1,000,000 St. Louis Home Owners' Association has taken on an aspect of moment to builders and manufacturers all over the United States. It is very probable that the project launched two weeks ago in St. Louis will become national thru legislation in the National Legislature. Within a short time a bill will be presented either in the House or Senate to provide the necessary legislation; Senator Spencer, of St. Louis, is said to be preparing a bill at present. Joseph W. Folk, former governor of Missouri and counsel for the Chamber of Commerce, one of the organizations which formulated the plan, recently held a conference with Secretary Wilson and Assistant Secretary Post, of the Department of Labor, and both officials looked upon the project upon a national scale with favor. The only way in which the Department of Labor would figure in the plan, either from a municipal or Federal viewpoint, would be in the matter of securing Federal tax exemption on the securities, as under the land bank bill, if the project were to be made national. The Department's recommendation to this effect is virtually assured.

The corporation proposes to build homes for workingmen not to exceed \$5,000; salable for 10 per cent. down and the balance in installments covering a period of not more than 15 years. The homes will be erected in tracts near labor centers where large industrial plants are located. The manufacturers and other employers of labor will be the principal stockholders in the corporation, which, under an agreement, will not earn more than 5 per cent. Manufacturers, and even real estate men, from whom would be expected whatever opposition might arise, have declared themselves solidly behind the project and many have offered to take an active part. A committee has been selected to formulate a plan of operation.

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Texas To Advertise Thruout State

The annual convention of the Texas Brick Manufacturers' Association was held at the Gunter Hotel, San Antonio, Texas, on June 16 and 17.

One of the principal matters to come before the convention was the state-wide advertising campaign. A pamphlet is being prepared and will be ready for distribution shortly, illustrating different types of houses constructed with brick. A mass of information concerning building work in general also will be included in the pamphlet, which will include exact prices of the various kinds of brick. Another feature is that plans and specifications of the structures can be secured for the asking.

C. W. Martin, of Dallas, discussed the need for silos in Texas. "Last year there were 7,000,000 acres of corn in Texas and an average of 11 bushels to the acre were produced, a good bit of the corn having been burned by the hot August sun. If silo facilities had been available to take care of this crop, fully ten times the number of cattle could have been fed with the ensilage," he said. "As it was, a big part of the crop was ruined."

"Sales Methods and Ethics," was the topic discussed by O. B. Robertson, of Gonzales, and "Cost Accounting as Ap-

plied to the Manufacture of Brick," was the subject of an address by A. G. Moore, a local accountant.

The program on the 16th consisted of the president's annual message and the report of the secretary and treasurer, besides an address by Clifton H. Tupper, on "Will It Pay the Brick Manufacturers of Texas to Advertise?"

Judge W. S. Fly was a speaker of the evening at the banquet and declared that the brick industry is the oldest in the world. He urged that the tendency of the American to build for a day instead of for permanency be corrected as much as possible by the brick manufacturers. Some of the clay men who attended the convention were: O. B. Robertson, of Gonzales, W. H. Pugh, of Marshall, J. O. Atzeles, S. W. Cole, C. C. Batcher and G. C. Cole of Ferris; F. J. Carle of D'Hanis, M. P. Twomey of D'Hanis, John Neece of Mexia, J. R. Neece of Corsicana, C. W. Martin of Dallas, Henry Wagner, Jr., of San Antonio, W. R. Bennett of Fort Worth, and L. Pruitt of Elgin.

✱ ✱ ✱

Building Figures Exceed Any Previous Year

Building contracts awarded during the month of May, 1919, exceed those awarded any previous month of the year and furthermore exceed those for May of any year since 1912; likewise the total for the first five months of this year exceeds corresponding figures for previous years.

Residential construction leads both in value and in the number of projects closely followed in value by public work and industrial building.

The figures which are given below were obtained from statistics of building and engineering operations compiled by the F. W. Dodge Co., and cover operations in the states north of the Ohio and east of the Missouri rivers. The steady increase of building activity, month by month, for this year is shown in the following table:

Month	Value
May	\$245,097,000
April	191,823,000
March	107,972,000
February	95,103,000
January	50,731,000

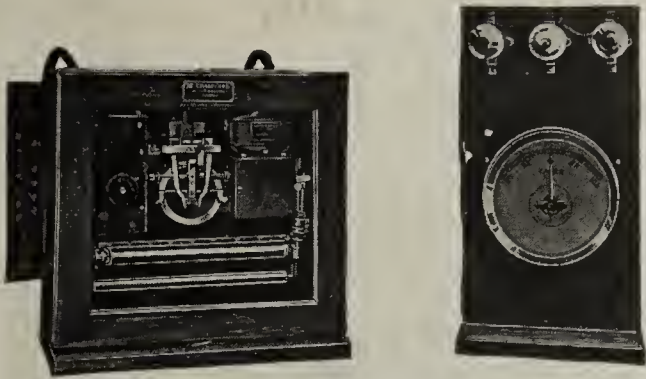
Contracts awarded from January 1 to June 1, and during the month of May, for the indicated years are as follows:

Year	May	First five months
1919	\$245,097,000	\$690,726,000
1918	120,495,000	663,516,000
1917	157,563,000	624,861,000
1916	131,436,000	456,101,500
1915	77,146,000	321,241,100
1914	72,011,000	300,721,000
1913	93,613,500	379,001,500

In comparing figures for 1919 with those of previous years, it must be borne in mind that the 1919 dollar buys much less steel, brick and labor than the prewar dollar did, so 1919 figures are not so optimistic as they may at first sight appear. However, if the figures for the month of May can be considered as a true barometer of building resumption and are compared with the figures for the month of May in other years, it can readily be seen that these figures are very optimistic indeed.

✱ ✱ ✱

Great Falls, Mont., reports that building is going on very briskly in that section. Brick and all clay products are said to be in very good demand.



Leeds & Northrup Recording Pyrometer and Furnace Indicator controlled by it.

Potentiometer Accuracy with Unlimited Power for Signalling and Control

ALL Leeds & Northrup Thermocouple Pyrometers are of the potentiometer type, which excels all others in precision. The adjustment of the potentiometer is effected by external power the galvanometer acting merely as a current detector. The power available is sufficient, not only for operating the recording pen or printing wheel, but also for the operation of switches, as for lighting signal lamps at the furnace, or of a contact on a slide wire controlling a large visible pointer at the furnace. The photograph shows a recorder and a furnace indicator, and the red, blue and white lamps, which call the operator's attention when the temperature is high, low, or within prescribed limits, respectively.

The Leeds & Northrup Recorder is also used for controlling the temperature of the furnace, as by operating rheostats, valves or dampers. The control can be carried out in any predetermined manner as to both time and temperature.

Leeds & Northrup pyrometric and thermometric equipment covers the entire range of temperature determination and control.

If you are interested in Thermocouple or Optical Pyrometers or in Heat Treatment ask for our new Catalog 87.

The Leeds & Northrup Company

Makers of Electrical Measuring Instruments, including indicating and recording thermocouple and resistance pyrometers, optical pyrometers, condensers, galvanometers. Wheatstone bridges, testing sets, etc.

4909 Stenton Ave., Philadelphia, Penn.

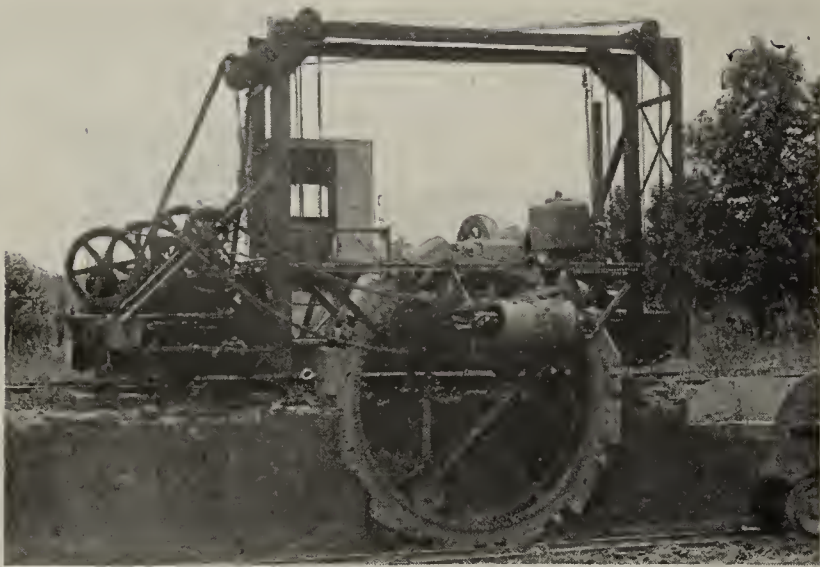


Figure the cost of **UP-KEEP**

Perfect mixture and saving in labor are not the only points to consider when you buy a clay digging machine—cost of upkeep is of equal importance. A digger that mixes clay and saves labor, but runs up expense for fuel, and repairs, is an expensive machine at any price.

"The up-keep of the Buckeye Traction Clay and Shale Digger is small," writes one of our customers. "The only thing wearing out to any extent being the spades of the cutters that shear the clay off, and the side cutters. Our blacksmith relays these with steel again. It takes only two sets of cutters to run the season." The cost for oil and grease is negligible.

Write us about the conditions in your clay pit. We will be pleased to send you figures and data.

The Buckeye Traction Ditcher Co.
Findlay, Ohio

Buckeye Traction Digger

The new Model C. M. is equipped with a combination conveyor which enables operator to change his discharge from pit to bank delivery, alternating as desired.

MACHINERY and EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

Extension to Erie Steam Shovel Plant

The Ball Engine Company, of Erie, Pa., builders of the Erie Steam Shovel let a contract on June 18 for building an addition to their shovel erecting shop. The new building will be approximately 175x125 feet in area.

Other additions to the Erie Shovel plant are contemplated, as the demand for the well-known Erie Shovel is such as to warrant further extensions.

✻ ✻ ✻

The Brown Instrument Company, Philadelphia, in an open letter to the industry, refer to the splendid business which their company is enjoying, and as an instance cite that out of calls made on seven plants in Ohio by their Detroit representative, six arranged to have Brown Pyrometer equipments installed.

This condition is not limited to the Ohio district, because their representatives in other cities are equally busy lining up progressive plants in their territories.

As a reason they state that the brick industry has seen the remarkable possibilities in this world-wide reconstruction, and is resolved to get its share of much larger business with a Brown Pyrometer control.

Such plants as Martinsville Brick Co., Standard Brick Co., Decatur Brick Mfg. Co., Western Brick Co., Chicago Sewer Pipe Co., Milroy Drain Tile Co., National Drain Tile Co., Indiana Drain Tile Co., and Colfax Tile Co., are among those recently equipped with Brown Pyrometers.

✻ ✻ ✻

The W. E. Caldwell Co. of Louisville, Ky., tank manufacturers, associated with J. B. Crawford, an experienced saw mill man, will build a 30,000 to 35,000 cut band saw mill in St. Landry Parish, La., where they own large tracts of cypress, ash, oak and gum timber.

✻ ✻ ✻

K-B Pulverizer Company announce the removal of their office from 70 Worth Street to 92 Lafayette Street, New York City. A new address but the same organization ready to give prompt attention to inquiries about the K-B pulverizer.

✻ ✻ ✻

Sauerman Bros., Monadnock Block, Chicago, Ill., announce the return of Major D. D. Guilfoil to his former position as salesengineer. Major Guilfoil came back from France in command of the 1st Battalion, 108th Regiment Engineers, on May 23, received his discharge at Camp Grant on June 7, and was back at his old job on June 9. The 108th Engineers, composed mainly of Chicago men, participated in the Somme and Meuse-Argonne offensives, and following the armistice, was a part of the Army of Occupation in Luxembourg.

✻ ✻ ✻

Carl H. Zwermann, formerly at Newark, Ohio, is now located in Robinson, Ill., where he is building a pottery for himself to manufacture plumbing fixtures. He will install one of his Continuous Railroad Twin Tunnel Kilns in the plant.

✻ ✻ ✻

The Celite Products Co., 11 Broadway, New York, manufacturers of Sil-O-Cel and other insulation specialties, has increased its capital from \$1,000,000 to \$1,400,000 to provide for increased operations. The company is a California corporation, having its mining properties in this state, and maintaining offices in the Van Nuys Building, Los Angeles.

BRICK *and* CLAY RECORD

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

When Working Hours Are Reduced

THE TIME WILL SOON BE HERE when the clay products industry will find that it has to conform to eight-hour day labor. The gospel of the eight-hour day is making inroads into every industry and there has been some talk already on the possibility of the clay plant operating on this basis. This will necessitate a big change in the industry since nearly every plant operates ten hours a day.

A reduction of two hours a day working time will affect the industry in several ways. It will likely raise the price of clay ware, because the lower production each day resulting from a reduction of working time means a direct loss to the manufacturer. The claim that as much product can be turned out in eight hours as in nine or ten does not hold good when machinery does the work and limits the pace. The loss cannot be made good without additional equipment.

Increased cost of building material would seriously interfere with the development of the enormous construction era that is promised. Hence, it is very essential to do all in one's power to keep costs down. There are a number of places where machinery will increase production on a plant without materially increasing the cost—in fact, in some instances there is no doubt but that the installation of certain equipment would cut down operating expense.

How to keep up production without materially increasing the costs and yet at the same time cutting down twenty per cent. on working time is a problem that confronts the clay products manufacturer. Serious thought on the use of more labor-saving machinery requires your attention and there is no better time than now to commence to look into these matters and begin to work out labor and time saving schemes.



Ceramists Need Protection

YOU NEED hardly to be reminded of the great developments and achievements of the ceramic industry since 1914. Chemical and optical glassware, domestic and chemical porcelain, and the refractories industry have grown to considerable magnitude during the war and are supplying a very important commodity that is extremely essential.

However, reports indicate that unless greater protection is given these industries from the competition of foreign manufacturers, all the money and time spent in the development of these products will be of little value from now on. The magazine "Refractories" reports that fire brick manufacturers in the East and on the Pacific Coast are beginning to feel the competition of imported fire clay brick. The present ten per cent. tariff is pretty poor protection, it is claimed.

In the glass and porcelain industry, Japanese ware threatens to displace American made products. An amber-colored alien can construct the most ornate Japanese pottery and live luxuriously, working 12 hours a day for twenty-five cents. An American pottery worker could never hope to eke out an existence on such a low scale. The result has been that the Japanese have been able to bring ware into this country and sell at such prices that a death blow will be dealt the American industry unless protection is afforded.



Finances Holding Back Building

WHILE THE PUBLIC is slowly becoming reconciled to the new level of material and labor costs in building construction, and greater confidence is being displayed as evidenced by the present building activity, there is still an obstacle in the road that will have to be hurdled before the full volume of building construction is felt. Financing building projects which is a problem in itself, has to be met.

There is no difficulty in financing construction for public works. Municipal bonds are attractive because of the tax exemption features and are now enjoying an excellent market. The total amount that will be required for certain types of industrial construction which is essential will not be so high but that the money will be available. The railroads are a separate problem. Their construction program is beset by many complications which will require solution before it can go ahead.

A scarcity of funds for real estate mortgages for residence and apartment house construction looms up as a hindrance in this class of construction work. Insurance companies, ordinarily heavy investors in this field, have bought large amounts of Liberty Bonds. Individual investors of substantial means have been disposed to get out of the mortgage market. They have either taken advantage of tax free obligations or have preferred to invest in high grade stocks and

bonds which can be bought to yield well and have an active market. Saving banks have funds available for building, but they are inclined to be conservative and are unwilling to accept, as a rule, a valuation as much over the 1913 level as increased building costs would seem to require. Furthermore, they operate under a legal limit as to the amount which they can place upon first mortgages. Building and loan associations have been called upon heavily for funds, but have not been able to meet the demand upon them and various projects have been under discussion to assist them.

The building shortage must be met, and the great prosperity which most individuals and firms have enjoyed during the war should point the way to the main factor in the solution of the problem of finance. Prospective builders should be urged not to depend upon the mortgage money market to the extent to which they had been accustomed prior to the war, but should be prepared to invest a greater proportion of their own capital than heretofore whether they be planning home building or factory construction.

* * *

The Mechanical Man in the Ceramic Plant

IN THE PRODUCTION of ceramic wares there is a certain phase of plant operation that is frequently overlooked—the need for the mechanically trained man. The potter is primarily a potter, that is, he knows clays, mixtures, burning, glazes, decorations, firing and so on thru the different features of manufacture, but usually he doesn't know the fine points of mechanical operation—if he did, he wouldn't be a potter.

These so-termed fine points of mechanical work are of primary importance. From the generation or delivery of power to the operation of the machinery in the clay-working department, there is a gap that calls for the training and ability of the mechanical and electrical engineer. He supplies the technical knowledge that is vitally essential for right methods of production—he furnishes the skill that is needed for plant efficiency, and which the average potter lacks.

He is the man who can help materially to reduce general overhead; he can ascertain if the isolated plant is operating efficiently, or if the purchase of electric energy from the public utility corporation, with subsequent delivery for plant power and lighting service, is on an economical basis. He cuts down the waste, he increases the effectiveness of operation, and works for plant betterment from beginning to end.

Such a man is not an expense, but a wise investment. His value is apparent everywhere, for

the greater his knowledge in clay-working lines the greater his worth to the pottery or ceramic plant; he helps not only on the power and mechanical phases of operation, but on the machinery and manufacturing ends. His trained mind works for improvement, his inventive genius to the development of features and devices for this machine that will make it a better servant in the works, or an automatic part for that machine that enhances operation. He knows what to do and how to do it. Guesswork is eliminated, specific function and desired results take the place.

And still another thing—he does away with the necessity for calling in outside mechanical aid in times of trouble. This aid is of two classes, the first, honest and sincere, fixing the machine or the device properly, and in a manner to last; the second, just the reverse, or the man who mends temporarily, preying on the ignorance of the potter, and making necessary frequent calls for repetition of the job. It means constant expense to the potter, but continued profits for him. These parasites, for such they are, are no novelty, they thrive in every pottery section—and the potter, ignorant of mechanics, helps them to thrive.

We all can't know it all. The electrical and mechanical engineer of evident ability knows his game, and the wise potter should let him play it in his behalf. A few months of this defined ability working to the best interests of the ceramic plant will show defined results—results that now may be least expected. Fortunate, indeed, is that pottery that has learned the advantages of mixing abilities, of keeping each man in the place of his natural bent and abilities. And a visit to such a plant by the potter who has still to learn the lesson will likely open his eyes. He will wonder how it has been done, but it's no mystery or secret, it's just practice applied in the right direction. It's a synonym for dividends.

Every Common Brick Manufacturer

of whatever plant output, who has not already secured a copy of the prospectus, describing the greatest promotional campaign ever undertaken in behalf of common brick, should obtain one immediately by writing to:

Secretary Ralph P. Stoddard,
1907 Conway Bldg.,
Chicago.

COMMON BRICK PUBLICITY PLANS APPROVED *for* ACTION

Youthful Organization of Common Brick Manufacturers Ready to Launch National Promotional Campaign to Start This Fall—Architectural Bureau Established—Trademark Adopted—Secretary's Plans Approved at Important Meeting of Board of Directors

SAILING ALONG with the smoothness and speed of a skyrocket and then bursting forth with a similar sudden expanse and marvel, the Common Brick Manufacturers' Association of America, has already drawn up and approved plans for a widespread publicity and promotional campaign on the use of common building brick. It is remarkable that altho this organization only recently passed the first anniversary of its inception, it has blossomed forth into a large and powerful association, and is now prepared to embark upon the first national campaign ever undertaken for the popularizing of common brick.

At a meeting of the board of directors held in the offices of the Illinois Brick Co., Conway Bldg., Chicago, on Monday, July 7, the plans formulated by secretary-manager Ralph P. Stoddard for the proposed publicity campaign were approved and the leveling of assessments sanctioned. When William Schlake, president of the Common Brick Manufacturers' Association and also president of the Illinois Brick Co. called the meeting of the board of directors to order there were present the following men: C. H. Bryan, Mercier-Bryan-Larkins Brick Co., Detroit; Ernest S. Barkwill, Barkwill-Farr Co., Cleveland; Tom W. Green, Tom Green Brick Co., Sioux City, Iowa; Fritz Salmen, Salmen Brick & Lumber Co., Slidell, Ala.; John P. Cahoon, Salt Lake City (Utah) Press Brick Co.; Charles Francis, Francis Vitric Brick Co., Muskogee, Okla.; W. N. Cary, Cary Brick Co., Albany, N. Y.; Max D. Almond, Whiteselle Brick & Lumber Co., Corsicana, Tex.; B. W. Ballou, Kansas Buff Brick & Manufacturing Co., Buffville, Kans.; and Ralph P. Stoddard.

THREE YEAR CAMPAIGN PLANNED

The plans call for a three year promotional and publicity campaign to start in Fall and to be carried on by means of advertising placed in popular national magazines and prominent national architectural and building journals. This advertising will be supplemented by booklets which are being prepared by the association. Inquiries which will result from this publicity work will be followed up by pamphlets containing literature expanding on the advantages of building with brick and containing complete working drawings for a vast variety of homes. Plans for houses that can be built at a cost of \$4,500 to \$12,000 will be illustrated. These books and pamphlets will be distributed thru the individual members of the association according to the requirements of the particular needs of the territory they serve.

The funds with which to finance this big campaign will

be acquired by assessing each member but a trifling amount for each thousand brick sold. The amount of the assessment has not yet been definitely determined but it will be almost negligible, not more than a few cents a thousand. It is surprising to note the large amount of money that can be raised by this means considering the total annual production of common brick. Statistics show that the normal annual production of common brick in the United States before the war was in excess of 7,000,000,000. At the present time the association membership includes firms having an aggregate output of 2,300,000,000 brick yearly. New members are joining daily and by the coming Fall when the campaign will be under way, it is expected that there will be a membership representing a total annual production of fully 4,000,000,000 common brick.

To aid those who have joined the Common Brick Manufacturers' Association and helped put across this move for popularizing brick and also to insure the public of good brick, a trademark has been adopted which will be stamped upon every brick produced by members of the association. This identification will also be carried on all advertising and literature distributed by the association or members. The idea will be to popularize the trademark and to inform the public that it stands for excellent quality, proper business ethics, and good service. This arrangement will also lessen the opportunity of non-members reaping the harvest of the advertising without contributing to its support.

ARCHITECTURAL BUREAU ESTABLISHED

The association has instituted an architectural bureau that will keep draftsmen busy drawing plans for small houses. This is a service that will follow up the advertising but the work will not be in the realm of houses such as are drawn by the architect. This new department will be under the direction of William Carver, an architect of many years experience, who has just been appointed to the position of head of the architectural bureau of the Common Brick Manufacturers' Association of America. Mr. Carver will have charge of the preparation and issuing of the plans and booklets that pertain to this class of work.

Reports received at the headquarters of the association show that except in one or two cases where labor trouble is interfering with building construction, the sale of common brick is exceedingly good. This indicates that the time is ripe for the launching of the coming campaign. To aid in securing additional members to the association by telling the many advantages to be gained by becoming a member,

Mr. Stoddard will visit various sections of the country where group meetings will be held. He will also talk on the plans for the promotional and publicity work.

Great credit is due Mr. Stoddard who altho appointed to his present office barely two months ago has achieved great progress in the preparation of this publicity campaign. Permanent headquarters of the association are now at Room 1907, Conway Bldg., Chicago.



United States Short One Million Homes

An important gathering of realty interests from all parts of the country, covering the National Association of Real Estate Boards, assembled at Atlantic City, June 25-28, for an annual convention. An interesting program was arranged for the meeting, embracing pertinent addresses from leading realty men and others. In opening the convention, William H. Garland, president of the association, said that there was a shortage of about 1,000,000 homes in the United States at the present time, and that these homes must be built.

Among the other speakers were Senator Edge, New Jersey; Louis A. Moses, Cleveland, O.; Irving E. Macomber, vice-president, the United States Housing Corporation; and Ex-Governor Edward C. Stokes, New Jersey.



Build Now for Reconstruction

The War Department, thru Colonel Arthur Woods, is urging state, city and county officials to push work on public buildings in order to provide jobs for returning soldiers and sailors. There has been a gratifying response to this advice, because it is universally felt that the immediate return of ex-service men to suitable employment is of the utmost importance. In commenting on the possibilities of this means of reconstruction, Colonel Woods says:

"Every contract which is let makes more work in the forests, at the mines, in the quarries and at the railroads, in addition to the labor requirements of the operation itself, and this means more jobs for returning soldiers and sailors."



JUNE ORDERS BREAK ALL RECORDS *for* BASIC BUILDING COMMODITIES *in* EAST

ACTUAL SIGNING of the articles of Peace brought about a sharp turn in the movement of building materials, according to The Dow Service Daily Building Reports of July 7.

In fact, the volume of eleventh hour orders, indicated to many firms that actual confirmation of specifications for almost every kind of basic building commodities was withheld almost with one accord until the war was officially ended. On June 30th the flood of orders, many from unexpected sources, turned the month's record into one of almost record-breaking proportions.

Portland cement offers a notable example. Inquiries for that month were twice what they were in May; far more than the spring movement as evidenced in the month of April; five times that of March; ten times that of February and thirty times that of January.

Last minute orders put June nearly 500 per cent. ahead of the same month in 1918; 300 per cent. above that of 1917; 400 per cent. ahead of that of 1916 and 550 per cent. ahead of that of 1915. The volume of inquiries exceed every month during the last five years with one exception, that of October, 1916, which month exceeded the number of inquiries for June, 1919, by only a few thousand barrels. Instances are known where companies are already endeavoring to purchase cement from other mills in order to fill the orders they took earlier in the spring.

BRICK MEN OFFER BARGE CAPTAINS \$10 INCREASE

Pressure for common brick has become so great at the instance of forward buyers anticipating the building movement for the remainder of the year that at a meeting of the brick manufacturers held in the middle of the week, it was decided to offer the brick barge captains \$10 a month advance, making their monthly wage \$125 and if the offer is not accepted they will take necessary steps to break the strike by putting into effect an entirely new organization for manning the barges and unloading them. Wholesale prices remain at \$15 per thousand, with the usual extra charge for delivery.

In the suddenly tightening market for general building materials, burlap manufacturers have notified the hydrated lime manufacturers that in view of the scarcity of this material, they will have to advance the prices of their bags and accordingly the quotation on hydrated finishing lime in cloth was advanced last week to \$24.60 a ton. This change in quotation, however, does not mean a higher price to the consumer, which fact emphasizes the attitude of the building material distributors of this market to keep delivered prices at existing levels as long as possible.

Instead of the 10 cent-per-bag rebate on empty sacks, the rebate is now 20 cents so that the actual cost is \$20 a ton to consumer, as it was when the price of the returned bag was ten cents and the quoted price \$22.60 per ton. In other words, the commodity itself has not advanced in price; merely the container.

This fact is also true of the container for Portland cement. Cotton cement bags have been advanced to \$200 a thousand from \$180 and barrels now cost 75 cents instead of 35 cents, which shows why the price of this commodity is generally expected to advance this coming autumn.

The foreign stone market is not likely to budge from its present price level, altho the market was advised last week that shipment of marble from Italy has been resumed.

LABOR CONDITIONS ONLY RETARDANT

Labor conditions on metropolitan district building operations is the sole retardant to a rate of construction progress that easily could pass all expectations. In nearly every case contractors are quoting their prices on contingencies of further labor adjustment after the first of the year regardless of whatever agreements have been made in the recent past. The only hope of avoiding further wage increases lies in the remote possibility of the cost of living receding between now and the first of January and a sharp turn about in the supply of labor. The cost of building materials is almost completely in strong hands and it may now be said to be almost completely stabilized as far as this year is concerned, except in so far as extended delivery dates are concerned.

MANUFACTURING CLAY *in* CANADIAN PLANTS

*Clay Manufacturers Might Find Helpful Suggestions
in This Article Written from Notes Taken at the In-
spection of Twenty Clay Factories in Eastern Canada*

CANADIAN CLAY PLANTS, referring especially to those factories situated in the provinces of Quebec and Ontario, may for the most part be put into three classes. Of these, one type is the large plant making mainly common brick and using continuous kilns. Another class is the establishment having from seven to twelve periodic kilns, while to the third class belongs the small soft mud open yard brick plants, which are located out in the country and in the small towns. The latter plants are gradually going out of business due to the high freight rates that now exist, the higher cost and scarcity of wood which is used to burn the brick, and the shortage of labor.

The main clay products manufactured are common brick, face brick, hollow tile, and drain tile. Owing to the fact that the vitrification range of Canadian clays is so short, the interval between the points of vitrification and melting being only 10 to 20 degrees, no paving block can be satisfactorily made. Trials have been made to make paving brick, but only the outer shell became vitrified and it was very brittle. The interior was of a porous structure. Most plants use a soft shale which occurs near the surface and with which they mix some of their surface clays. At Quebec a brown and buff colored brick is burned, while in Montreal, Ottawa and other points, red burning brick are obtained. At Toronto both buff and red burning brick is burned at the Don Valley Brick Co., Ltd., plant. In many cases the water smoking is done with the use of wood as fuel which they claim reduces the scumming of the ware which would otherwise result. Most plants burn their ware to a temperature of about 1,850 deg. Fahr.

NEARLY ALL PLANTS PURCHASE ELECTRIC POWER

The large plants are located in or near the large cities, such as Quebec, Montreal, Toronto, Hamilton and Ottawa. Practically all of these plants as well as the smaller ones purchase their electric power from central

stations and use this source of power nearly entirely because of its cheapness.

Canadian problems are much the same as those of American clay plants. Materials are high, fuel costs much and freight rates are burdensome. However, in one respect brick plants in Canada have an advantage not possessed by American clay plants. The demand in normal times is very good and not very much selling effort is required. Competition with other materials, such as lumber and concrete is not nearly as keen as in the United States. Nearly all home builders use brick and the message of brick does not have to be emphasized so much there as it does in the United States. Lumber is very high and concrete is not so popular. According to one manufacturer a six-room workingman's home can be built of brick for about \$4,000. The city of Ottawa can truly be called a city of brick homes. It seems that when a man wants to build he simply calls up the plant nearest him and gives his order.

At the time this article was written (early June, 1919) many brick plants in Toronto and other points have had to refuse orders for brick.

At Quebec is located the plant of the Citadel Brick & Paving Block Co. It is situated alongside a hill about 150 feet high from which is obtained the shale supply. The St. Lawrence River runs just on the other side of the railway tracks which border the factory. However, the plant is situated high enough not to be troubled any by the river. A feature at this establishment is the Buhrer zigzag continuous kiln which is used to burn the common brick on this plant. The kiln has a capacity of 400,000 brick in its twenty chambers. The chambers in this kiln are very small, being only about seven feet wide, by seven feet high to the key of the arch.

LOW BURNING COST CLAIMED

One man does the setting alone and does not need any



New Sewer Pipe Kiln With Cross Banding That Has Been Found Very Successful in Bracing the Kiln Structure.



Showing Two Kilns Under Process of Construction of the Seven Kiln Installation of the Minter System at Ottawa.

tosser to aid him. P. A. Galarneau, who is manager of this plant, also claims that four men can handle about 50,000 brick out of this kiln in about six hours. With the aid of



Interior View of Clay Storage Shed. The Dry Pan Is Mounted on the Platform in the Background.

three round down draft kilns the capacity of this plant is about 60,000 brick a day. It is claimed that they have burned 1,000 brick with as low as 250 pounds of coal in this zigzag kiln, but the waste heat is not used and 225 pounds of coal per 1,000 brick had been used for drying purposes. The kiln is operated so that three chambers are preheating, three watersmoking, three on high fire, and three cooling. One difficulty met with in this kiln is the turning of the corners, and it is here where soft brick are often found. Also the kiln lining on the interior corner is subjected to strenuous conditions. However, this concern plans putting in another zigzag kiln of a somewhat different type, designed by Richard Hoehne, of St. Louis, Mo. This kiln is to be built so that 75 per cent. of the ware can be wheeled out of the side of the kiln where the railway siding is located, while only 25 per cent. will have to be wheeled out of the other side of the kiln where no spur track is had. Wheelers at this plant are paid about forty-eight cents a thousand.

EIGHT CONTINUOUS KILNS ON THIS PLANT

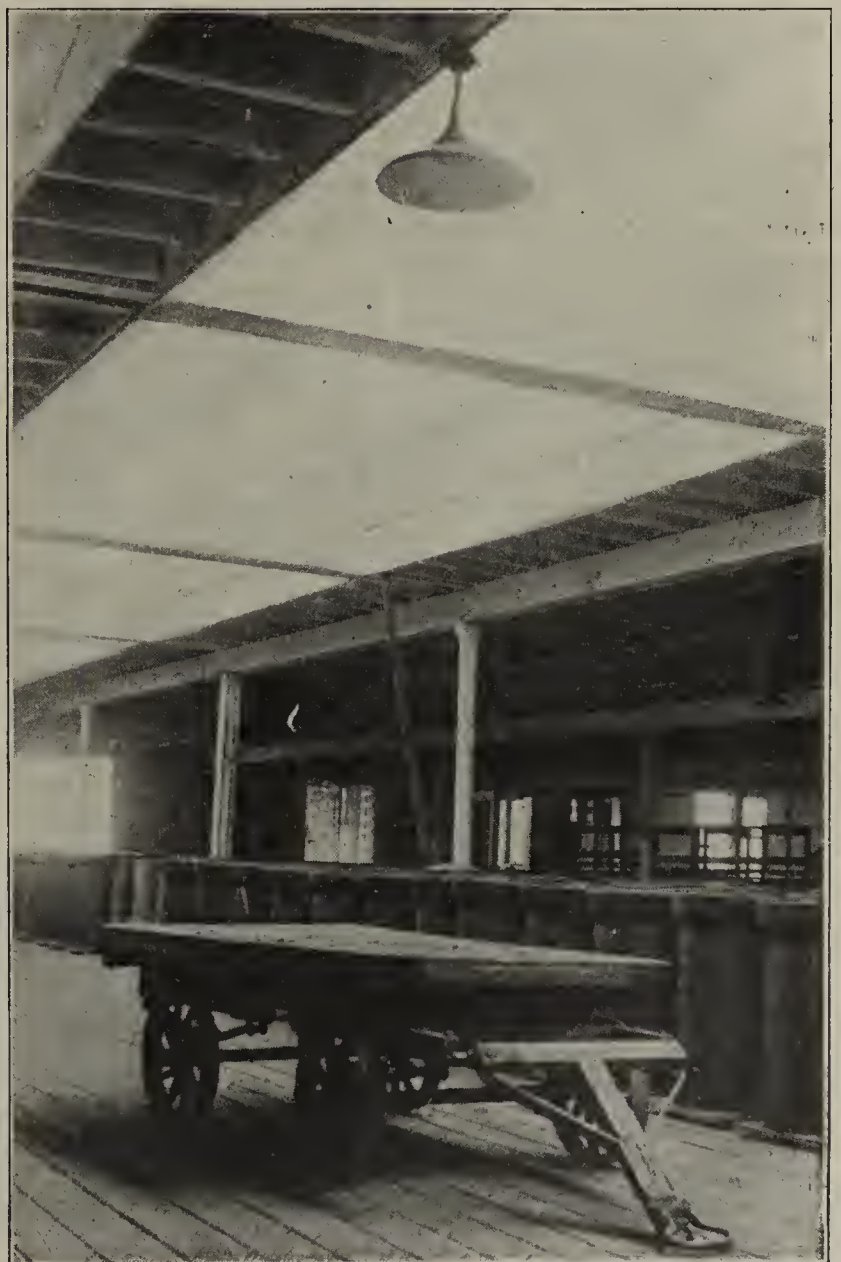
In the vicinity of Montreal there are a number of large plants, but the one of chief interest is that of the La Prairie Brick Co., Ltd., located at La Prairie, which is just a short distance from Montreal. This plant is probably the largest common brick plant in the world, having equipment capable of turning out a capacity of 425,000 brick a day. A battery of twenty-one dry pans is used for grinding the soft shale for the above capacity, but at

the present time the demand for brick is not sufficient to warrant operations at full capacity.

The brick are made mainly by the stiff mud process and are side cut. Radiated heat dryers are used for drying the brick, altho waste heat drawn from the kilns is also used. Some dry press brick are made at this plant and these are burned in thirteen rectangular down-draft kilns. The other brick are burned in the battery of eight, sixteen-chamber continuous kilns. These kilns as well as the entire plant was designed by L. W. McArthur, of Montreal. Each chamber of the kiln has a capacity of 50,000 brick and when operating at full capacity it is aimed to turn out one chamber in each kiln every day.

When coal was obtainable at \$3.90 a ton, it was possible to burn the brick at this plant at the cost of only seventy-five to eighty-three cents per thousand, including the cost of labor. At the present time a mixture of hard coal costing \$4 a ton and soft coal at \$6.23 a ton is being used for firing the continuous kilns. It has been found possible to burn brick with 325 pounds of coal per thousand with this type of kiln and using the waste heat for drying. With coal costing the above amount it now costs in the neighborhood of \$1.65 to \$1.75 per thousand to burn brick.

Wheelers hauling brick on barrels holding 100 brick are paid at the rate of thirty-eight cents per thousand for ware wheeled into the cars. Most of the wheelbarrows used in Canadian plants have larger wheels than



Third Floor of Sewer Pipe Factory, Illustrating Excellent Lighting Conditions—Artificial and Natural.

found on barrows used in the States. However, it is claimed that a better balance is obtainable with the large

wheel. When the plant is operated at full capacity there are about 400 men employed.

The St. Lawrence Brick Co., Ltd., which is but a stone's



Face Brick Kiln Which Is Unusual in Design Because of Its High Wicket Which Extends to the Crown.

throw from the above plant, is also a very large factory capable of turning out an immense quantity of common brick. One eighteen-chamber producer gas-fired Youngren kiln is employed and two sixteen-chamber continuous coal-fired kilns of the same type as found on the La Prairie plant, are used. Six gas producers furnish the gas for the Youngren kiln. A bucket elevator and a conveyor belt is used to elevate the coal and distribute it among the producers in the gas producer building.

USE CRANE TO DUMP CLAY CARS

The National Brick Co., Ltd., located at Delson Junction, is another large plant of similar design as the La Prairie Brick Co., Ltd. A very large dinky engine is employed to haul the unusually large clay cars which are in use at this establishment. Clay cars of six-yard capacity are employed to haul the clay from the pit to the plant. These cars are pulled up an incline to the storage shed by means of a wire rope and are dumped with the aid of a traveling crane which runs thru the length of the shed where the twelve dry pans are located. The use of this crane eliminates considerable trouble which is usually caused by the cars going off the track while in the process of dumping its load.

Evidence of the gradual petering out of the small yard is shown by the history of clay plants in Ottawa. At one time there were twenty-five small soft mud, common brick yards in Ottawa and nearby vicinity. Many of these



Open Air Drying Racks With Swinging Roofs to Protect Brick from Sun and Rain.

plants were located in the country miles from a railroad. However, nearly all of these plants lying in the country or small towns have gradually quit manufacturing be-

cause of the difficulty in bringing their ware to the consumer and because of the high freight rates that exist, together with the fact that it is hard to get labor to perform the work on this type of plant which usually is more strenuous than on the more modern factory.

MINTER SYSTEM BEING INSTALLED

At the present time there are but three plants remaining in the vicinity of Ottawa. One of the more progressive of the above three—one that is fortunately situated in respect to proximity in the city of Ottawa, is that of Merkley Bros. Ltd. This concern is making a vast number of improvements on its plant. It is changing over to the stiff mud process and proposes to make hollow building tile as well as wire cut brick. New machines and motors are installed; a dryer is being remodeled and a seven kiln installation of the Minter system is also being built. Three kilns are already well underway in construction. This plant also proposes to buy some motor trucks which it will use to haul brick and tile to the railroad yard or to the job to which it is to be delivered. When the improvements have been completed this will be one of the most modern medium sized plants in Canada.

The other yards are handicapped by being on the outlying districts and have too long a haul to the city. Both are very small and make only soft mud brick. Because of the greater need for labor on the farms and the remoteness of the plants from the city, brickmaking labor



First Floor of Sewer Pipe Plant Showing Iron Ducts Which Distribute Exhaust Steam That Is Used to Dry the Ware.

is hard to get and the plants are unable to operate consistently.

At Toronto may be found both large clay products plants and small soft mud common brick factories. On one street within the city limits are five soft mud plants, one right next door to the other. Each of these plants operates one soft mud brick machine and makes about twenty-five to thirty-three thousand brick in one day of eight to ten hours. Each plant differs with the other in several respects in regard to their equipment. At one plant there is being used round down draft kilns with the Boss burning system installed. However, owing to the fact that frequent penalties are being paid to the city due to smoking this plant has installed a twelve chamber Haigh coal fired continuous kiln.

Various means of drying the brick are in vogue. One plant uses open air drying racks in good weather and steam drying during the damp season. Most of the others use a direct coal fired dryer.

HORSE DELIVERS DRIED BRICK TO KILNS

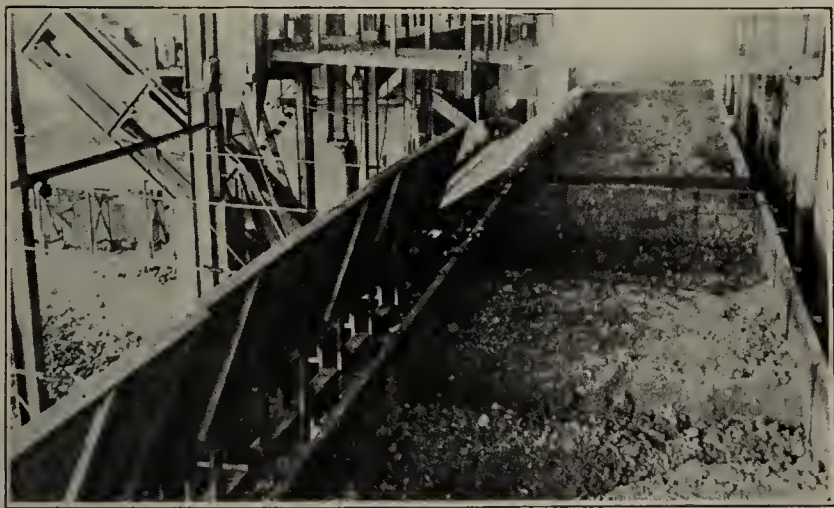
Some of the firms use rectangular kilns which are set so that a flue runs thru the center of the bottom benches for about the first five brick. The brick are taken from

the dryer cars and placed upon carts handling about three hundred and seventy-five brick, which is drawn to the kilns by a horse which is unhitched at the point of setting and permitted to return to the dryer all alone where it is again hitched to a dryer cart and repeats the same operation. In setting the kilns some of the plants place a one inch board between each bench to regulate the setting.

Nearly all of these concerns use the same number of men at the brick machine. One laborer removes the molds from the sander and places them in the machine; one removes the molds from the machine and smooths the brick over; the third man dumps the brick from the mold onto the pallets and places the empty molds in the sander while the fourth man places the pallets of brick on the dryer car. A boy places a pallet upon the ben for the one man to set the brick on after they are removed from the mold.

These brick molds require a thoro washing every twenty minutes so as to reduce the sticking of the clay to the mold. A large iron tub is frequently used for this purpose. A rack suspended by means of two rods which connect with eccentrics is caused to move up and down in the water which rinses the molds. Except in one or two cases where six mold machines are used, all plants employ five mold machinery.

In a few instances a chain conveyor is used to carry the



The Car in the Rear Has the Platform in Position for Unloading the Clay. The Platforms Alongside the Front Car Are Held in Position by Ropes and Pulleys.

pallets of brick to the point of loading on dryer cars or carts. This is usually done where it makes the work more convenient. A pug mill is frequently used in connection with a soft mud machine.

LARGE CLAY PIT FEATURES THIS PLANT

A short distance from Toronto is located a large plant, the Don Valley Brick Co. Ltd., manufacturers of high grade face brick. This factory has one of the most remarkable clay pits on this continent. The top forty feet consists of buff burning clay which is of very fine grain and which, altho soft, resembles in its cleavage and structure a shale. Beneath this is a seventy foot layer of soft red and buff burning clay followed by twenty feet of sand below it. At the bottom is worked seventy feet of hard shale which is of a red burning variety. All of these different stratum are worked separately in benches. The upper benches are worked by steam shovels, but the lower stratum is blasted down and then shoveled into carts by means of hand labor.

An unusually good "find" in regard to the type of drill used in drilling bore holes in the hard shale was made by Wm. Burgess, superintendent of this concern, and also president-elect of the Canadian National Clay Products Association. Formerly a tripod drill was used to drill the holes but recently a jack hammer drill was installed and

found to give very excellent service. It drills a ten foot hole in shale in one hour and is much lighter and easier to carry around than the drill previously used. One man



Part of a Row of Twelve Dry Pans, Clay Storage, and Track From Which Cars of Raw Material Are Dumped.

can do all the work connected with drilling, and it also has another great advantage in that it can be employed to drill holes in horizontal or angular directions without a bit of difficulty. The bottom of the pit is exceptionally well drained. Ditches lead the water from the faces of the pit back to a sump from which the water is disposed of by means of a Pulsometer pump. This pump has been in operation continually for some odd twenty years without offering the slightest bit of trouble. Absolutely no attention is required for this piece of equipment.

Both dry press and stiff mud brick are manufactured at this factory. Some enamel brick are also made. Common brick are turned out on a Chambers end-cut machine at the rate of about seventy to seventy-five thousand a day. The clay for the common brick is put thru a disintegrator, then thru a set of conical rolls, which throws out the stones and pebbles, and finally into the pug mill.



Wheelbarrows With Wheels of Large Diameter, Being Loaded in Interior of a Large Rectangular Face Brick Kiln.

From the waste heat dryer the brick are placed in fifteen rectangular down draft kilns or in the twenty chamber gas fired Youngren continuous kiln. Each chamber

of the kiln has a capacity for seventy-five thousand six-pound brick and the kiln is fired at a rate so that one chamber is finished every thirty-six hours. The dimen-



Steam Shovel in Process of Digging Shale from High Bank at Quebec.

sions of the chambers are approximately sixty by sixteen feet. Five gas producers are used which consume coal at the rate of four hundred and ten pounds for each thousand brick burned besides producing the steam required for gasification of the fuel as well as supplying the fan power on the kiln.

This kiln which has been in use for several years has been found very successful and is now liked better than ever before. It has taken a great deal of patience and study to bring the kiln up to its present state of efficiency. Geo. Cutbush, head burner, and the one who has been in charge of this kiln, has worked with it continually and overcome a great number of difficulties until now it is at the point where it works with great satisfaction. Mr. Cutbush maintains that the secret of success with a continuous kiln is to stick with it, to try to understand its weak points, correct these and ultimately you will get the kiln to operate successfully. Formerly, in starting the fires in this kiln the floor brick in the first chamber were removed, and the fires built in the flues contained in the wall separating the first two chambers. This always means a lot of work and made necessary the task of cleaning out the ashes and relaying the floor. Now, however, a new system is used. The main flue has been tapped by four fire boxes on the end wall which are fired whenever it is required to start the kiln on fire. Besides doing away with a lot of extra work it has resulted in the saving of fuel. Under this system it is possible to get up enough heat to burn the gas within forty-eight hours. It has been found cheaper to start the kiln over on a new fire with this arrangement rather than to try to catch up with the fire when the setting has lagged.

The Sun Brick Co., Ltd., which is located but a short distance from the above concern, has a Youngren kiln on its plant but is not so well satisfied with the results

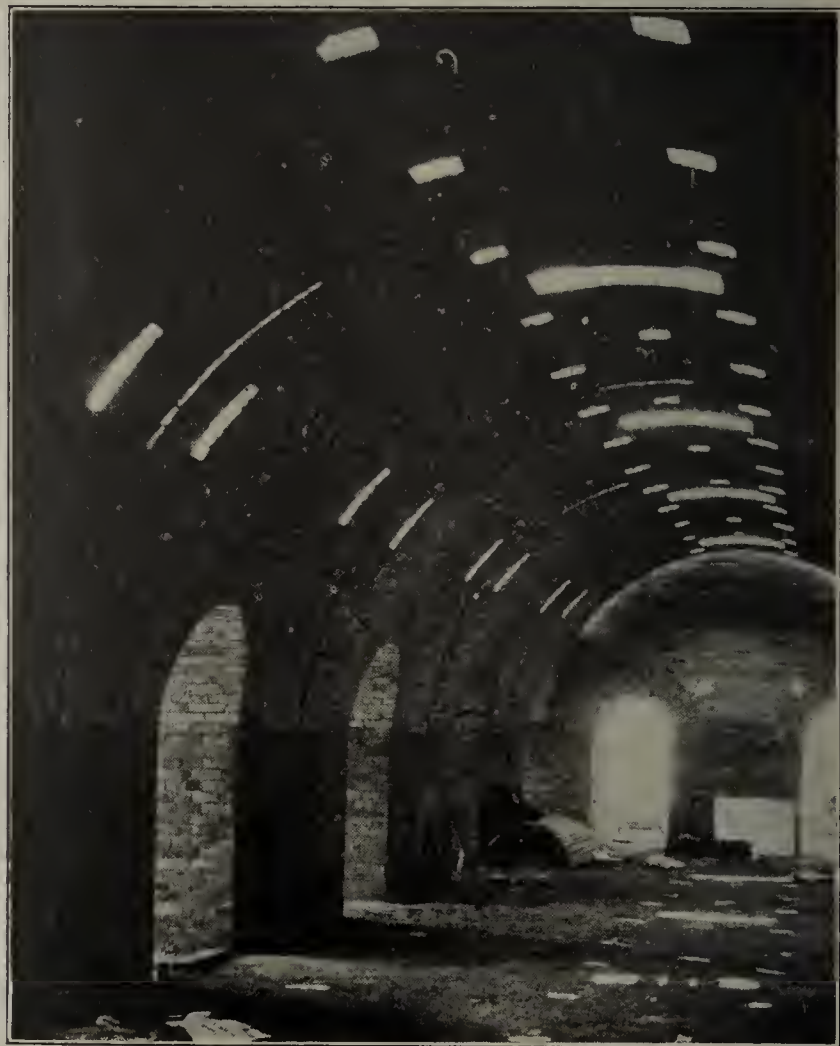
obtained from it. It seems that the kiln at this plant is not constructed as substantially as it should have been. Hollow tile is being burned in this kiln altho it is not so adaptable to the burning of this material as it is to the burning of brick.

PRISON LABOR MAKES CLAY PRODUCTS

At the Dominion Sewer Pipe Co.'s plant at Swansea are two new forty foot Hook round down draft kilns. These kilns have sixteen fire boxes and four stacks each. Owing to the lack of fire clay in these parts of Canada, only shale is obtainable and this shale does not take a very good glaze. The result is that in general the sewer pipe is not quite so well fabricated in Canada as it is in most of the parts where it is manufactured in the United States. Not far away from this plant is the Provincial Government of Ontario clay plant. Here prison labor is employed for the manufacture of roofing and floor tile as well as hollow building tile. This very modern plant manufactures a high grade product.

At Milton, Ont., can be seen the large face brick plant of the Milton Pressed Brick Co., Ltd. Both the dry press and the stiff mud process is employed here. The factory is equipped with eight presses and eight dry pans. However, at the present time, due to a shortage of labor, only two-thirds capacity is being produced. The plant is capable of turning out one hundred and fifty thousand brick a day. The clay is of a red color resembling somewhat the appearance of a clay found in the Watson-town (Pa.) district. An impurity in the form of gypsum is found scattered thruout the bank which necessitates careful winning of the clay from the bank.

The stiff mud brick are dried in a direct fired dryer and burned in seventeen rectangular down draft kilns. These kilns are quite different from those ordinarily seen in the states by reason of several points in their construction. The wickets are wide and high, extending up to



Interior of a Twelve Chamber Haigh Continuous Coal Fired Kiln in Process of Construction at Toronto.

the crown. The kilns are approximately sixty feet long, sixteen feet wide and fifteen feet high. They have about ten fire boxes on each side and these boxes have grates about fifty inches long and about two feet ten inches wide which slant downward at a slight angle. The bag walls are built along the whole length of the interior kiln walls. One single main flue about three and one-half feet wide by three feet deep runs thru the center of the kiln. A surprising feature of this kiln is its comparatively low fuel consumption. Only six hundred pounds of coal per thousand brick are used according to Frank McCannell, superintendent of this plant.

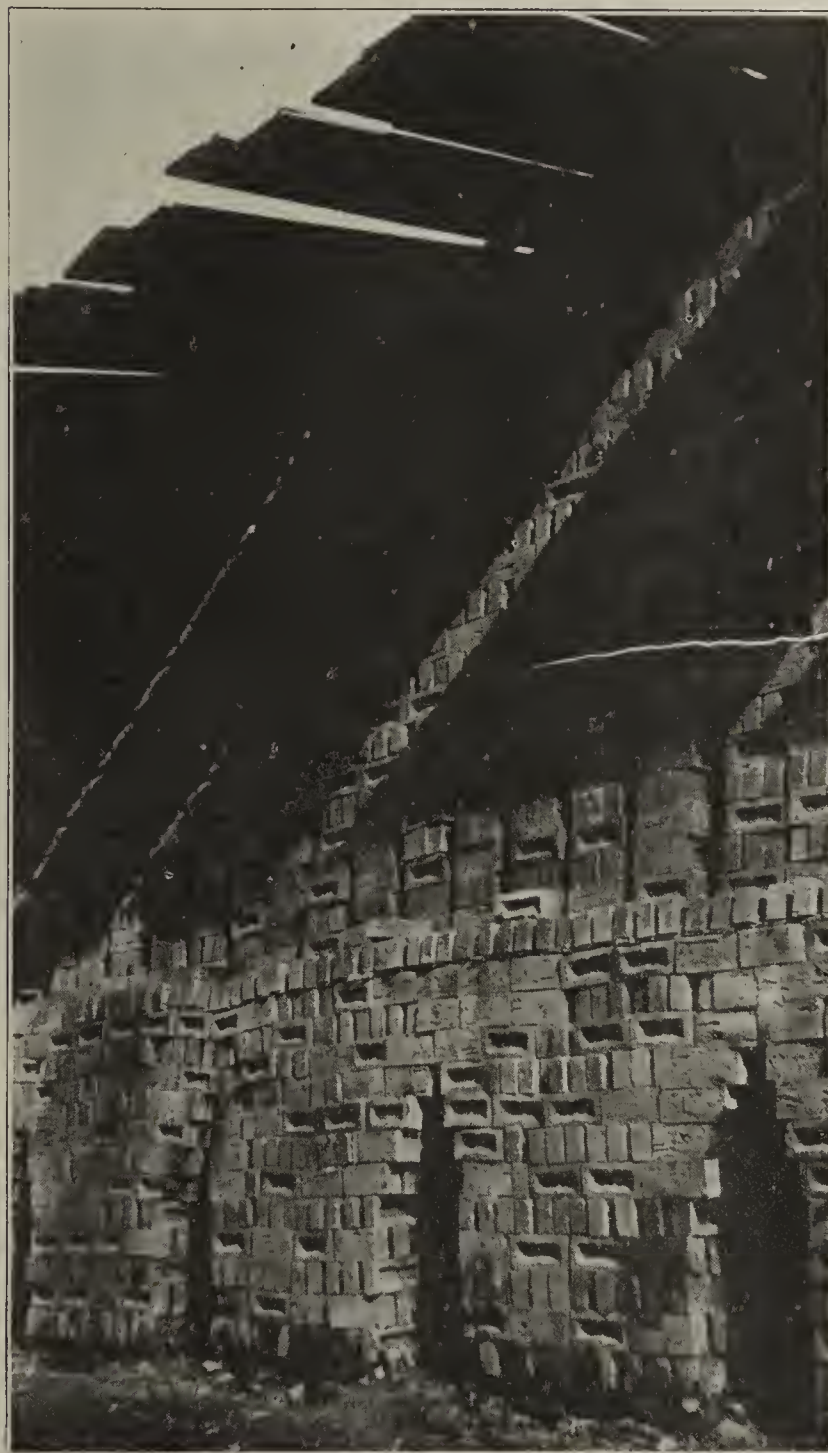
UNUSUAL METHOD OF UNLOADING CLAY

The Hamilton & Toronto Sewer Pipe Co. Ltd., factory at Hamilton, has recently been remodeled so that now it is a very important and up-to-date plant. It is unusually well lighted as will be noted by the accompanying photographs. Furthermore, a new artificial lighting system consisting of white enameled electric reflectors are placed about the factory at close intervals insuring good light at all times. Another feature is the fire hose on each floor of the building.

Large eighteen inch iron ducts distribute the exhaust steam from the press to the first floor where it is permitted to escape into the room at points about fifteen feet apart.

An unusual method of handling the raw clay is in use at this establishment. The clay is brought to the plant in gondolas. Two cars can enter the clay storage building at one time and be emptied. This is done in the following manner. Wooden platforms which swing on a hinge are laid in such a manner that one edge lies on the side of the car. This is manipulated in a very simple manner with the aid of ropes and pulleys. The platform is built in sections so that it may be easily handled. Clay

from the car is merely shoveled on to the platform and rolls down onto the belt conveyor. The belt conveyor carries the clay to a bucket elevator which pours the clay



Showing Arches and Setting of a Scove Kiln Used for Burning Soft Mud Process Common Brick.

upon a huge pile in the center of the storage shed. From here the clay is fed into a conveyor running beneath the floor and is conveyed to an elevator feeding into a dry pan. Owing to the fact that the clay is in small particles and is not very hard one dry pan takes care of all the clay ground for all the wet pans.

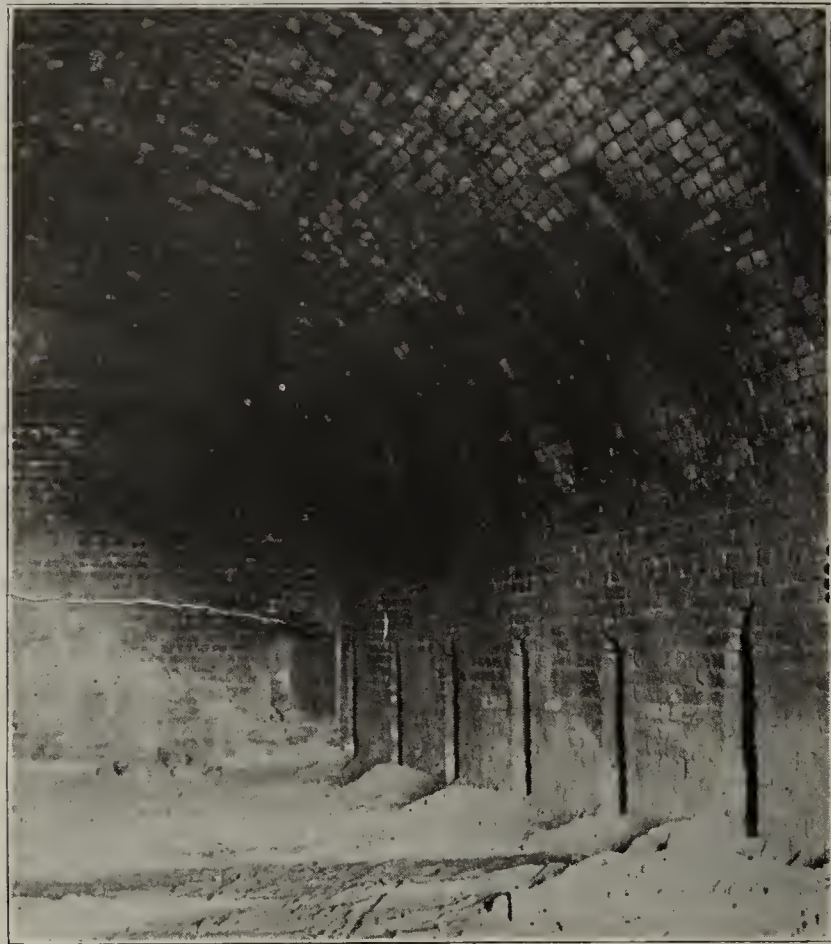
There are about seven round down draft kilns on this plant and a recent one was built with cross iron banding. This firm believes that this form of bracing is very successful in keeping the kiln in good condition.

Another interesting plant at Hamilton is the Hamilton Pressed Brick Co. Ltd., manufacturers of dry press face brick. Two machines making twenty-two thousand brick a day each, are installed in this plant. The clay used is a red colored shale which weathers to small pieces in a very short time. A very high bank of this shale is right adjacent to the plant. Hand digging and shoveling is resorted to and the clay placed into extremely small cars which are pushed by hand to the dry pan but a short distance away. The dry press brick are placed directly into the kilns which are thirty-eight feet in diameter. There are ten of these round down draft kilns. They



Interior View of One Chamber of a Youngren Gas Fired Continuous Kiln. The Bag Wall on the Left Is Covered with Paper.

are of the open floor type, each one having fourteen dead bottom fire boxes. Each one of these large kilns has a capacity for one hundred and fifty thousand brick. Robert New, who owns and operates this plant states that these



Interior View of One Chamber of a Coal Fired Continuous Kiln Such As Is Used on the La Prairie Brick Co., Ltd., Plant.

large size down draft kilns give very good results in burning his dry press, face brick. This plant has a very good location in regard to proximity to the city and railroad. The proposition is now under consideration to install stiff mud brick manufacturing machinery and proceed with the manufacture of wire cut, face brick.

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Fawcett Plumb, of Streator, Answers Final Summons

Fawcett Plumb, president of the Streator (Ill.) Brick Co., and whose name is inseparably linked with economic, social and civic interests of Streator, Ill., died at his home in that city on the evening of June 25, at the ripe old age of 84 years.

Mr. Plumb is the man who originally owned most of the land on which Streator now stands. It is not only in the physical appearance of the city that his impress is felt, but in the beginnings of every important industry in the town the imprint of his hand is seen. In the early days, when he was interested in coal mining, he was one of the pioneer experimenters with the clays of the community, and then with the making of glass, two industries which became the main reliance of the city. Later he invented the Plumb steam tile ditcher, one of the first power ditchers on the market.

In 1872 Mr. Plumb was made the independent candidate for state senator and served four years as such. A man of exemplary habits, of honest and straightforward principles, he was widely recognized as a modest, whole-souled man.

Fawcett Plumb was born in Andover, Ohio, December 10, 1834. He graduated in law in 1867, shortly after which time he came to Illinois. Early in his career he manifested remarkable executive force, keen discrimination and extraor-

dinary business ability, so it was not strange that he soon became identified with all the progressive movements in the city. He was one of the organizers of the Streator National Bank, and in 1891 became president, an office which he retained until his death. As president of the Streator Brick Co. he has been associated with one of the leading industrial enterprises of the city. As owner of the Plumb Opera House his name is linked with another phase of the city's progress.

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Fire Brick Shortage in Sight

Members of the Refractories Manufacturers' Association who attended the meeting in Atlantic City, June 25, were, almost without exception, of the opinion that business conditions in the fire brick industry are improving, the consensus of opinion being that more inquiries had been received and more business booked during the first three weeks of June than in April and May combined. Reports from all producing sections were that labor was becoming scarcer each day, due mostly to the number of foreigners who are leaving for their native homes on the other side.

An interesting address was made by George E. MacIlwaine, of Babson's Statistical Organization, of Wellesley Hills, Mass., on the labor conditions in England, and their influence on the labor situation in this country. Mr. MacIlwaine had been a member of a commission appointed to confer with labor leaders of Great Britain, and his personal impressions were very interesting.

The general opinion expressed was that, unless the present rate of production is increased, there will be a shortage of clay fire brick by August 15, and that any manufacturer who makes fire brick for stock at present cost of production will reap a good profit on the amount invested in labor and material when the time comes to ship what he is now making. This was based on recently compiled statistics, showing that the fire brick plants were averaging a production of 53 per cent. of their rated capacities, and that this low rate of production was so increasing the overhead cost as to bring about a condition which was aptly described as "offering their products for sale at less than it cost to make them." It was figured that, if the plants would at once increase their rate of production to 75 or 80 per cent. of capacity, even with the present high cost of labor, they would be making brick at a cost which would give a profit, if sold at the present market quotations or perhaps at a very slight advance.

The next meeting of the association will be held in St. Louis, July 24 and 25, Hotel Statler.

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Sand-Lime Brick in 1918

"The sand-lime brick industry in common with other building industries experienced a severe setback in 1918 by reason of the general conditions prevailing in that year," says Bulletin II:2 on "Sand-Lime Brick in 1918," issued by the United States Geological Survey, a copy of which may be obtained by writing to the Government Printing Office, at Washington, D. C.

The paper goes on to say that the decrease in output compared with 1917 was 89,147,000 brick, or nearly 48 per cent. The principal causes of the decrease were the scarcity and high cost of materials and labor, congestion of transportation and Government restrictions on the use of fuel and on general building. Forty-seven operators reported sales in 1917, while in 1918 there were only forty-two operators reporting.

URGE MANUFACTURERS NOT *to* PROCRASTINATE *with* FREIGHT RATE QUESTIONNAIRE

Much Work and Time Required to Round Facts and Figures Into Shape for Presentation at Hearing—Statistics to Be Compiled Will Be of Permanent Value to Industry

By Waldon Fawcett

IT IS UP TO the brick and tile manufacturers to make the next move in the fight for freight rate relief. Moreover, it is the hope of the leaders of the industry who are in close touch with the situation that the rank and file of producers will not procrastinate. If the men in the industry were cognizant of the "feel-ers" which the director general of the railroads is constantly putting out with respect to further increases in freight rates—an advance that would presumably add to the almost intolerable burdens now borne by the clay products industry—it is inconceivable that any man would neglect his responsibilities in this quarter, for all the lassitude of the dog days and the distractions of the vacation season.

The petition on behalf of the industry for a readjustment and revision downward of existing rates on brick and building tile which, as outlined in previous issues of *Brick and Clay Record*, has been the subject of so much thought and work, has now been formally filed with the Interstate Commerce Commission—the supreme court of the railroads. A hearing on this petition cannot be had before early autumn, but it is to make ready for that hearing that the active aid of every manufacturer in the industry is needed. He must supply the evidence, the brass tacks information that will back up the arguments in the petition and clinch the contentions with cold figures of actual performances and experiences.

"DO IT NOW"

To round up the information that is sought from trade sources in uniform fashion is the object of the questionnaire which is now in the hands of each brick and tile company. The alarm that is sounded on the score of a need for promptness in response is due to the circumstance that, for all that the questionnaires were mailed several weeks ago with requests that they be filled out and returned at once, comparatively few of these schedules of facts and personal grievances have yet reached Washington. Such questionnaires as have put in appearance attest the fact that the manufacturers can furnish the very sort of information that is needed for the rate fight—which renders the men who are pushing the matter before the Commerce Commission all the more eager to hear from every interest in the industry—but with it all is a fear that many brick and tile makers do not appreciate that this is a case for the "Do It Now" motto, if there ever was one.

Some of the brick and tile interests that have been prodded have replied that it was their understanding that the industry's plea for a square deal in freight rates could not be heard before September and that surely there was plenty of time between now and September to get in the data on trade conditions. Here is the rub. The hearing which, by the way, is likely to be before a member of the Interstate Commerce Commission in person, will probably not occur before late September, but it must be borne in mind that to take a special private census of the industry is one thing and to round the facts and figures into shape for presentation at the hearing is quite another thing.

Perhaps some brick and tile men have not grasped the situation but it is not the intention to file the filled-out questionnaires which they turn in, as "round robins" or signed petitions are sometimes filed. Instead, these replies to a score of leading questions are designed for the confidential information, as one might say, of the men who are leading the fight for freight rate relief. They will digest, mobilize and assemble the facts from the thousand or more questionnaires into one concrete "exhibit," the aggregates and totals in which are expected to make an impression upon the railroad arbiters that could scarcely be expected if the officials were left to their own devices to dig out the facts in the mass of questionnaires.

A COMPLETE EXHIBIT TO BE PRESENTED

It probably requires no argument to show that it is necessary or at least a fine thing for the interests of the industry to have the conditions and complications of the industry as a whole thus merged into one graphic panorama but it is going to take time. It is not merely columns of figures and tables that will be presented to the Interstate Commerce Commission to prove the case of the brick and tile industry but likewise there will be spread before the arbiters charts with red lines and black lines to show at a glance the ups and downs of the trade during the last few turbulent years. Weeks and months of hard work are needed to consolidate figures and translate them into forms that show the currents of trade just as a weather map shows air currents. Unless the questionnaires are returned in good season the exhibit before the Interstate Commerce Commission on which so much depends will be less complete than it might be.

While we are on the subject of the effort to show the plight of the brick and tile industry in outline pictures it may be noted as a stroke of good fortune that the industry has at work for it in the preparation of this evidence the one man who, by reason of experience, is best qualified to do it. He is Wayne P. Ellis and is perhaps known to some of our readers as the former statistician of the Iowa State Railroad Commission. For about a year and a half past Mr. Ellis has been in the service of the U. S. Fuel Administration but luckily that institution released him a short time since and just in the nick of time to allow him to take up this work of painting a bird's-eye picture of the past, present and future of the brick and tile industry.

The survey of the industry that is now being made thru the instrumentality of the questionnaire is not only going to pile up a mountain of proof of the need for freight rate relief but it is also going to yield interesting statistical information of permanent value to the industry and which has not heretofore been available even thru such channels as the U. S. Census. The intimate and essential character of the information that is to be tapped may be surmised from the comprehensive questions that are being asked of each brick and tile company.

For one thing, this round-up will make possible comparisons that have not heretofore been possible as to the number of brick and tile plants which are served by only one railroad in each case and those that have service from two or more roads. Contrast of direct service with switching arrangements will likewise be possible. Manufacturers have been called upon to state any and all serviceable facts regarding their locations, railroad service, etc.; what kind of cars are furnished for loading; what distances empty cars are brought for loading; what service there is for assembling empty cars at the plants; etc., etc. It is a reasonable assumption that if there is a frank response to these queries the outcome will be a compendium on brick and tile transportation the like of which has never heretofore been seen.

With the completion of the "exhibits" for the railroad rate hearing the industry will also have its first complete, dependable chronicle of just what the trade has passed thru during the war period. The questionnaire calls for figures on production by years from 1912 to 1918 inclusive and January 1 to May 1, 1919 in tons and there is to be subdivision in figures and also in percentages to show the relative production of face, paving, and common brick and tile. Incidentally each manufacturer has been asked to state whether his plant is now in operation and what percentage of normal is his present output.

INCLUDES SURVEY OF COMPETITIVE CONDITIONS

By means of questions on competitive conditions this survey is expected to go to the very heart of the most practical question in the industry. Each manufacturer is expected to not only outline the general territory in which the bulk of his production is sold but also to point out what competition from other materials he meets and the distances from which come the competitive materials. Going deeper, the probe will seek to obtain an expression from each manufacturer as to whether there is any territory that should be a natural market from which his product is excluded or in which it is at a serious disadvantage by reason of excessive or unfair transportation rates. It goes without saying that when the whole country has been heard from on this count it will be possible to judge more accurately than could be done in the past whether competitive conditions are

what they should be in the brick and tile field or whether trade rivalry transcends that competition that is supposed to be the life of trade.

It must be borne in mind, however, that all these leading questions that are being asked with respect to the organization and operation of the brick and tile plants of the country are merely by way of supplying a background for the portrayal of transportation history. In order to present the latter in concrete and convincing form each manufacturer has been asked to enumerate his actual shipments during 1916 and during the period from June 25, 1918, to May 1, 1919. The data sought on each shipment covers destination, number of cars, number of tons, actual haul in miles, rates per ton paid, present rate to destination, short haul from plant to destination and the tariff authority for the rate now in effect. Information is also sought with respect to all claims for loss and damage collected by each manufacturer from the railroads during the respective periods mentioned. Hollow building tile manufacturers are expected to indicate whether their product is carried on the brick list and if not whether it is on a commodity rate or a class rate or percentage of class rate. Finally, those who report will tell what other commodities are shipped from the respective cities affected in car lots and in this last it is believed that there will be revealed clearly the discrimination of which everybody who has made a study of the situation believes that the brick and tile industry is the victim.



Belgium to Use American Brick Machinery?

The American-Belgian Chamber of Commerce, with headquarters in Brussels, Belgium, has requested that copies of *Brick and Clay Record* be sent to them so that these issues may be consulted by members and enquirers interested in the clay industry.

The letter states: "On account of the many opportunities for American brick making and pottery machinery manufacturers to find an interesting market for their products in this country, in view of the reorganization and re-equipping of the Belgian brick industry the Chamber should possess an American publication which contains the most specific information regarding new features and improvements in the brick and clay industry.

"You are no doubt aware that the soil of various districts of Belgium offers the best raw materials for the manufacture of brick and clay products, and this industry employing many hands before the war is looking forward to placing orders in America for more up-to-date machinery. Before the outbreak of hostilities the brick making machinery was supplied to Belgium principally by German firms and we think that under the present circumstances the American manufacturers in this line, as well as in many others should take the lead in purveying Belgium with the necessary equipment, permitting the complete restoration of the industries and eliminating thus all possibilities of competition on the part of Germany.

"It cannot be neglected to draw your attention to the fact that Belgium is in need of many necessities of life and that all industries for their recovery are in want of new up-to-date machinery. All this should be supplied by the United States of America for the greater part, and that is why this organization stands as a disinterested medium between both countries."

NEW JERSEY CERAMISTS OUTDO THEMSELVES

Record Gathering at New Jersey Clay Workers' Association Meeting at Trenton—State Museum of Ceramic Products Furthered—Splendid Program of Papers Heard

THE ANNUAL MID-SUMMER MEETING of the New Jersey Clay-Workers Association at Trenton, N. J., June 24, proved a record day in more than one instance. The attendance was greater than at any previous gathering at this season of the year; the papers presented were par-excellence, short, comprehensive and touching on pertinent topics; while enthusiasm and the spirit of good fellowship ran high. Everybody was there to "mix" and enjoy himself, with pleasure and profit, and this everybody did.

The success of the meeting stands most commendably to the credit of those in charge of arrangements, and speaks well for the earnest efforts directed to the promotion of the event in calling members' attention to the desire to have all possible in attendance—for everyone "to come out." This work not only took the form of direct mail circularizing by Professor George H. Brown, secretary, but included an announcement in the Trenton daily paper by Charles Howell Cook, president, extending an invitation to every person interested in clay products to attend the meeting. In this it was set forth with emphasis that both students and practical men should take this opportunity of getting together with their fellow craftsmen, and that membership in the organization was not necessarily required. Mr. Cook urged in this notice that no one connected with the industry should be absent. Trenton is an important pottery and clay-working center and, most decidedly, this announcement had its good effect.

The meeting was held at the Trenton Country Club, a garden spot about three miles from the main section of the city and a most appropriate place to hold a gathering of this sort. Moreover, the plans embraced a luncheon for those present at the clubhouse, and helped to insure "keeping the crowd together." This it did, and more—for as the day wore on, the attendance grew until it reached close to 100 members and guests.

AFFILIATION WITH THE AMERICAN CERAMIC SOCIETY

The morning session was called to order by President Cook at about 11:20, and was followed immediately by the inspiring occurrence of the flashing of a picture of the American flag on a screen behind the speakers' table. The initial business covered the affiliation of the local organization with the American Ceramic Society; the charter granting this connection was framed and on display. It was passed upon formally by those assembled and accepted by a unanimous vote. In the future the association will be known as the New Jersey Clay Workers Association and the Eastern Section of the American Ceramic Society.

This charter carries the names of those making the application to the parent society, these being: Charles A. Bloomfield, George H. Brown, R. H. Minton, E. C. Hill, Fred A. Whitaker, August Staudt, Abel Hansen, R. L. Clare, George Sinclair and D. J. Fisher. With the requirement for the

election of officials for the new affiliation, the following nominations were made: Chairman, Charles Howell Cook, president, the Cook Pottery Company, Trenton; Vice-Chairman, Abel Hansen, president, Fords Porcelain Works, Perth Amboy; and Secretary, George H. Brown, director, Department of Ceramics, Rutgers College, New Brunswick. These are the present officials of the New Jersey Clay Workers' Association, holding the offices of president, vice-president and secretary, respectively. Charles A. Bloomfield, head of the Bloomfield Clay Co., Metuchen, was nominated as Counsellor for the new organization.

August Staudt, former president of the association, took the chair to accept the vote for the election of these officers, and which was unanimous; the ballot was cast by R. H. Minton, vice-president of the American Ceramic Society, present at the meeting. The officers are elected until the next annual meeting of the association, to be held in December. The present executive committee will be retained, this being as follows: (Term expires December, 1919) Fred A. Whitaker, General Ceramics Co., Keasbey; Hubert Somers, Somers Brick Co., Atlantic City; Herbert Sinclair, Star Porcelain Co., Trenton; E. C. Stover, Trenton Potteries Co., Trenton; and R. H. Minton, General Ceramics Co., Phoenix Works, Metuchen. (Term expires December, 1920) George E. Hoffman, Monument Pottery Co., Trenton; Cyrus Borgner, Cyrus Borgner Co., Philadelphia, Pa.; Samuel Bedson, Elite Pottery Co., Trenton; D. J. Fisher, Sayre & Fisher Co., Sayreville; and Everitt Townsend, Robertson Art Tile Co., Trenton. (Term expires December, 1921) August Staudt, Perth Amboy Tile Works, Perth Amboy; A. M. Maddock, Thomas Maddock's Sons Co., Trenton; R. K. Bowman, Trenton Fire Clay & Porcelain Co., Trenton; Andrew Faltz, Lambertville Pottery, Lambertville; and Charles A. Bloomfield, Bloomfield Clay Co., Metuchen.

"KEEP THE KILN FIRES BURNING"

The business program was opened by President Cook, with an instructive and inspiring address. Early in his talk he mentioned the slogan, "Keep the kiln fires burning," and this terse and appropriate phrase stuck to the meeting throughout the sessions.

He said that the clay-working industry was one of the most important industries in the state, and the most important in the line of minerals, while the New Jersey Clay Workers' Association was unquestionably one of the leading organizations in the state. The immense value of the ceramic industry, he pointed out, was seemingly not fully appreciated, nor the tremendous potential possibilities evidenced at the present time. He spoke of the remarkable and never-to-be-forgotten accomplishments of those in this line of endeavor during the war, and the big future before the industry now ahead in the so-called reconstruction period.

Continuing, he said: "The war is won and just begun; our work is ahead of us; we must strive for still bigger things; the way is cleared, and the possibilities are unlimited. This is the day of the young man, and it is up to him to appreciate the opportunities and responsibilities; the opportunities are numerous, they are everywhere—and the responsibilities are many. We must help the younger element in the industry and look in turn for help from this quarter. We must build for the future."

At this point the speaker cited a few pertinent references covering recently compiled statistics, showing the vast proportions of the clay-working industry in New Jersey. The clay deposits of this state are the most important on the Atlantic Seaboard; it has the finest deposits of plastic fire clays of any state in the union; the capital invested in the industry in this district is about \$40,000,000, while the annual production is valued at close to \$20,000,000. There are 247 ceramic plants in New Jersey; of these, 87 are potteries, 78 building brick and hollow-ware plants, 25 fire brick and terra cotta works, and 57 clay miners.

The comparative value of ceramic products in the United States was pointed out, showing a total of \$447,000,000 per annum, and being only exceeded in valuation in manufactured goods by cotton products (\$701,000,000), men's clothing (\$584,000,000) and chemical goods (\$548,000,000). The value of ceramic products in the country per annum as compared with mineral products, indicates a second position on the list, with the valuation noted, being exceeded only by soft coal (\$493,000,000). As compared with agricultural products, ceramic goods are fifth on the list, which is headed by corn, wheat, hay, cotton and oats, in the order named. The ceramic production considered in this tabulation includes clay wares of all kinds, glass, cement, enameled wares, plasters, lime abrasive products and allied specialties generally understood as being embraced in the ceramic field.

FOREIGN COMPETITION CONFRONTS INDUSTRY

In his concluding remarks, President Cook spoke of the necessity for a full realization of the active and keen competition which confronts the American manufacturer of ceramic wares in connection with imported goods. He said that a little over a month ago, or during the last days of May, a special trans-continental freight rate for imported goods from Japan and the Orient was placed into effect by the Railroad Administration. On less than car-load lots the rate was reduced from \$2.70 to \$2.00 per hundred pounds, and in carload lots, from \$1.87½ to \$1.50 per hundred pounds.

"Japanese labor," he said, "now receives about 14½ cents per day of 12 hours, as compared with the high scale of wages now prevalent in this country. The American manufacturer cannot compete on this basis; for instance, in my own line of business, our price for cups and saucers is \$1.80 per dozen, while from China similar articles, possibly not so good, but cups and saucers just the same, are available at 20 cents a dozen. At the present time, we cannot produce enough of our ware to supply the demand, but this does not hold good for all time.

"Something must be done to protect the American producer. The aid of Congress must be sought to see that trade treaties made with foreign countries do not conflict with our manufacturers, and especially the potters. We can't lower wages, and we do not want to. We want to manufacture in the right way, to pay our employes on a basis that will allow them to live decently, and bring happiness and content to the greatest degree. We need more efficiency—that is true, but we also need protection; we must have it.

"This, gentlemen, is your opportunity and your responsibility. The individual effort of every man here, and of every

man in the industry is required. We must strive to correct those things that are not right, we must work, as a unit for increased activities, and we must, by all means, keep the kiln fires burning."

Continued applause greeted Mr. Cook's remarks, and a motion was passed to have copies of the address printed for general distribution in quarters where it would help to bring about the desired results.

METHODS OF CERAMIC KILN CONTROL

The first paper on the program was "Methods of Ceramic Kiln Control," by Professor George H. Brown, covering an instructive and illuminating digest of the important subject of burning. It was pointed out that unless adequate control of the kiln is had during the firing of ware, the chief losses thruout the process of manufacture take place in the burning. The percentage of first quality ware resulting from the burning is governed in a large measure by the burning action and the so-called vitrification range of the body from which it has been manufactured.

After a kiln has attained a red heat, it was set forth, the temperature increase is dependent to a certain extent on the design of the kiln, flues, stack and their relation to each other; this relationship cannot be disregarded in attempting to establish a method of control in the firing. There are certain fundamental rules which must be considered in the burning of clay products, and the firing of the kiln should be governed accordingly.

Following, information relative to the proper length of burning was given, this being dependent on the time required to heat up the kiln for a uniform temperature distribution, and the size and character of the ware being fired. In this, Professor Brown said: "It has been our experience that the time of burning of commercial kilns can very often be materially shortened, especially in the early stages of the firing of light wares, loosely packed in saggars. In firing wares of this character, the most important stage of the burning is the soaking period at the conclusion of the burn, and quite frequently, much time and fuel are wasted in prolonging, unnecessarily the early stages of the burning."

DEVICES FOR KILN CONTROL

Considering the direct subject of kiln control, it was pointed out that the best known and most widely used devices for kiln control are cones, firing discs, pyrometers and sometimes, draw trials. Each of these were then considered individually. In the matter of cones it was said that these do not have true melting points, and that the practice of expressing the so-called melting points of cones in degrees Centigrade or Fahrenheit should be discouraged. These temperatures frequently apply only to the manufacturer's kilns or test furnaces when fired under fixed conditions and do not hold true with the cones when employed in commercial practice.

In finishing a burn with cones, it was set forth that it was not enough to stop the firing when a certain cone has softened and deformed, but that the conditions under which the cone has melted, viz: the time rate of heating, should be known. It was recommended that rather than place but one or two cones in the sight-holes of the kilns, a series of cones should be arranged in each hole, so that there may be some means of judging the progress that the kiln is making during the finishing stage of the burning. Thus, when firing to Cone 8, Cones 1, 3, 5, 6, 7, 8 and 9 on the cone plaques will enable one to measure the rate at which the temperature is increasing, and also, whether there is over-firing.

Firing discs, it was remarked, produce very satisfactory results when properly used. By drawing the discs at regular

intervals and taking the time factor into consideration, excellent control may be had. It must be kept in mind, however, that the discs do not measure temperatures, but a condition in the kiln.

The employment of a pyrometer in connection with cones or firing discs would seemingly bring into play an ideal method of kiln control, the pyrometer being used as a means of controlling the rate of temperature increase, and the cones or discs for finishing the kiln. Regarding pyrometers, Professor Brown said he had no hesitancy in recommending such an installation when assurance is to be had that the instrument will receive proper attention and will be intelligently used. Under such conditions, there is no question as to the value of a pyrometer in the control of ceramic kilns.

In conclusion, the question was asked in the paper if better results could not be secured in different plants by the employment of a better trained and higher paid man for kiln supervision. Given a man of this type, it was set forth, with good understanding and proper instruments, there is bound to be a reduction in the percentage of kiln losses.

An interesting discussion followed, particularly with reference to the so-called better man for work of this nature. It was brought out that conscientious men, with brains and ideas, and especially young men should be employed as labor-understudies in the ceramic plant, as numerous benefits would be derived. A plea was made to give the young man now in a ceramic school a chance, allowing him to receive his education first and mixing this with practical knowledge as he progressed.

TERRA COTTA GLAZES

An instructive technical paper termed, "Some Data on the Development of Terra Cotta Glazes" was presented by E. C. Hill, Conkling-Armstrong Terra Cotta Co., Philadelphia, Pa., this being the second and final paper arranged for the morning session.

This treatise covered some experimental work in the matter of bristol glazes carried on by Mr. Hill recently while engaged at the Department of Ceramics, Rutgers College. Bristol glaze mixtures, it was pointed out, are generally understood to be those containing feldspar, flint, clay, whiting and zinc-oxide. The main object of the experimental work was to learn the effect of the addition to such mixture of tin-oxide, barium and magnesium carbonate, one or more of which is frequently used in the production of terra cotta glazes. Strontium carbonate, not ordinarily used, was also included in the tests. The paper, as presented, was profusely illustrated with lantern slides.

It was pointed out that as the feldspar is increased, additions of clay made the different mixtures less fusible. Reference was made to a previous study by Mr. Hill, showing that in high zinc bristol glazes, any increase of clay decreases the fusibility of the mixtures considerably. "It is evident," the speaker remarked, "that clay increases the fusibility of the mixtures only when there is a considerable amount of CaO present, and in mixtures similar to those in these tests, the CaO must be 40 eq. or more. CaO is the only component of a bristol glaze that reacts readily with clay to form fusible mixtures."

In conclusion, Mr. Hill said that the subject at issue was one which presented a big field for investigation and study.

"BRICK AND CLAY RECORD" RECEIVES TRIBUTE

The eastern representative of *Brick and Clay Record* was present at the meeting, and this journal received unexpected honors at the hands of those gathered together. At the conclusion of the morning session, Charles A. Bloomfield made a motion that a vote of thanks be extended

to *Brick and Clay Record* for its active and extensive editorial representation in the state during the past months, saying that much had been accomplished by this energetic and commendable effort in making known more and more the great clay resources of New Jersey and its warranted position as one of the leading states in the ceramic industries. This motion was quickly seconded, followed by recommendation that it be a rising vote. The response was unanimous.

A brief acknowledgment of this tribute was made on behalf of the journal by its representative, with remark that if the efforts were showing results and warranted such honors from those assembled, the inspiration so derived would act as an incentive to still greater accomplishments in the future.

EVERYONE "CANED"

To use the remark of President Cook, "everyone was caned at the meeting." The well-known *Brick and Clay Record* canes were presented to those gathered together, and these attractive walking sticks made a decided hit. They were in constant evidence thruout the meeting from start to finish, being used as pointers in the presentation of the different lantern slides, for applauding by tapping on the floor, and for calling attention to this or that.

A supply of about 100 of these canes was rapidly absorbed, and as one might be sure, no sticks were left by the recipients after the meeting was over.

MUSEUM OF CERAMIC PRODUCTS

Before the adjournment for luncheon, President Cook made a few remarks relative to the proposed establishment of a museum of ceramic products manufactured in the state. Professor Brown had mailed a notice prior to the meeting urging members to come to the gathering prepared to make suggestions and recommendations in this connection, and give an idea as to such specimens of ware they would be willing to contribute. A few interesting pieces were on display, notably those brought to the clubhouse by Mr. Cook, representing some remarkable specimens of some of the earliest of decorated wares produced in the state, and dating as far back as 1801.

Mr. Cook furthered the thought of this museum, which will probably be located at the State House, Trenton, in an able manner, impressing upon his audience just how such an exhibition would enhance the status of the ceramic industry in the state, and how it would make possible the securing of appropriations from the Legislature for needed work, such as a new building to house the Department of Ceramics at Rutgers College, New Brunswick.

He said that the wonderful specimens of ware in different branches of the industry now being manufactured in the state should not be kept under cover. "Pottery," Mr. Cook remarked, "is an art and science. New Jersey has accomplished phenomenal work along this line, and such as should not go by unnoticed. It is up to us to start this movement for a state museum, and I hope to have your individual and hearty co-operation."

A delightful course luncheon was served on the veranda of the clubhouse, and thoroly enjoyed by all. Initial arrangements provided for a smaller number of persons to be accommodated than was evidenced, and the manner in which the "over flow" was handled speaks well to the credit of the culinary department of the club. From start to finish, nothing was wanted, and a still happier crowd, if such were possible, reassembled for the afternoon session shortly after 2:30.

PRECISE DATA IN CERAMICS

One of the important papers of the afternoon meeting was that of A. V. Bleining of the Bureau of Standards, Pitts-

burgh, Pa., entitled, "A Plea for the Use of Precise Data in Ceramics." The substance of his remarks covered the adoption of standards, recognized and authoritative standards, in all branches of the ceramic industry.

He pointed out the more and more apparent need for accurate data in investigation and experimental work. Referring to specimens of clay received by the Bureau for sampling from all parts of the union, he said that the majority of these were worthless because the necessary data for full explanation and intelligent handling were not available. There should be specific rules to cover the taking of samples of clay, flint spar, etc. In the matter of glaze materials and the impurities so frequently evidenced, high in sulphur, and the like, it was set forth that these should be purchased under defined specifications.

More should be known about the properties of clay products, conductivity, etc., as well as the leakage of electric currents thru material of this character. Other items in this line touched upon were the coefficient of expansion at different temperatures; difference between the coking value of clay brick and silica brick; effect of sudden heating and cooling; heat capacity of fire brick and other materials; strength tests; mechanical strength; load conditions, etc.

As regards the matter of the time of kiln burning, Mr. Bleininger said that the time was coming when a standard burning curve will be developed, giving a definite procedure for work of this nature; the time effect is very important, and as much so as the matter of temperatures. He set forth that the physical properties of clay products was a highly essential matter.

Standard specifications, he hoped, would soon be perfected for fire brick; this term, as it stands today, means little or nothing, and the manufacturer of high grade and low grade materials in this line should be classed in their particular positions. Fire brick was being made in Ohio at the present time, he said, from face brick materials.

The shrinkage of clays, he pointed out, could only be determined accurately in one way, and that of volume; linear shrinkages and other shrinkages are of doubtless value. The big value of German clays is found in the small shrinkage; American clays should be accurately determined in this direction, and considerable present loss might be saved.

STANDARDS FOR MESH SIEVES URGED

Still another matter of importance is the sizing of grog, while a standard size for mesh sieves should be developed. At the present time, there are several kinds of 200 mesh screens, with the exact thickness of wire the governing factor. Another item of consideration is that of the character of the water, he said, and the quality of the supply.

Mr. Bleininger urged the co-operation of clay miners in the development of proper standards for determining the values of clay. Clays should be sold under definite specifications, and the lack of necessary information at the present time has brought about a decided want of interest in regard to different materials of this character; some American clays, he set forth, are not receiving the attention they deserve as their qualities are not being brought forward. Standard rules should be devised for the testing of clay properties; this would allow all clays to be handled in the same manner and make possible a careful comparison of the results.

He spoke of the necessity for standards in the matter of porcelain, pointing out that production of this character from the same plant and under seemingly like conditions, frequently differs. Likewise, the need for greater information regarding the annealing, or rate of cooling of porcelain, was set forth; this, he said, was a matter that should receive careful attention.

In conclusion, he remarked that to bring about the right conditions as regards definite working standards in the different branches of the ceramic industry was no easy task, that it represented a long job ahead, and one in which all those in the industry should co-operate to the greatest possible extent. He said that progress had been made in this direction by the National Research Council and the American Ceramic Society, and that plans were now being perfected for important extensions in the work.

CERAMIC KILN CONSTRUCTION

The next paper on the program set forth some interesting and valuable information regarding kiln construction, particularly in the matter of insulation. This paper, "Ceramic Kiln Construction," was by P. A. Boeck, chemical engineer, the Celite Products Company, New York. In the absence of Mr. Boeck, who was unable to be present, it was read by R. L. Warburton.

This treatise covered the subjects of the propagation of heat, heat losses and other technical matters along this line. It made reference to the right method of kiln wall construction and the necessary properties of insulating materials for effective results. In this latter connection, the product of this company, known as "Sil-O-Cel" was mentioned and its exceptional values in insulating ceramic kilns and other high temperature walls and equipment. This material is made in the form of brick, blocks, powder and cement; it is highly siliceous in nature and has a melting point of 2,930 deg. Fahr. (1610 deg. C.) as determined by the Bureau of Standards.

Such matters as kiln crowns, side walls and bases were considered, with an interesting and comprehensive review of a test kiln recently constructed by the company in California, thoroly insulated with Sil-O-Cel thruout. The paper was illustrated with a fine variety of interesting and illuminating lantern slides.

SOME ASPECTS OF BALL MILL GRINDING

Leslie Brown of Lenox, Inc., Trenton, manufacturer of high grade china ware presented the third and last paper of the afternoon session. This was termed, "Some Aspects of Ball Mill Grinding," and covered a reference to the different types of ball mills in use today, with particular mention of those now in service in this plant.

It was pointed out that the most important points for consideration in ball mill grinding are: Effects of time in grinding; weight of flint pebbles and their wear; measurement of water; and record of revolutions of mill.

In conclusion, Mr. Brown said: "Stress cannot be laid too greatly upon the conditions which the elementary materials require to fit them perfectly to meet the various stages thru which they must pass in the working processes required in the formation of pottery wares. Of course, the quality of the materials is of first importance, but under our consideration of their treatment in ball mill grinding, the condition of the materials becomes of primary technical importance, particularly as to their uniformity and the adaptation to the kind of wares required."

Another paper noted on the afternoon program, "Some Problems in the Manufacture of Vitreous Sanitary Ware," by Samuel Bedson, Elite Pottery Co., Trenton, was omitted, owing to the inability of Mr. Bedson to be present at the gathering.

ATTENDANCE

Among those present at the meeting were:

George H. Brown, Director, Department of Ceramics, Rutgers College, New Brunswick, N. J.
E. C. Stover, Trenton Potteries Co., Trenton.
F. S. Thompson, Rutgers College, New Brunswick.
H. K. Walton, Thwing Instrument Co., New York.
E. C. Hill, Conkling-Armstrong Terra Cotta Co., Philadelphia, Pa.

J. B. Maddock, Jr., John Maddock's Sons Co., Trenton.
 Otto W. Will, Roessler & Hasslacher Chemical Co., Perth Amboy.
 Abel Hansen, Fords Porcelain Works, Perth Amboy.
 R. H. Minton, General Ceramics Co., Metuchen.
 L. E. Hersh, Palmerton, Pa.
 Andrew Faltz, Lambertville Pottery, Lambertville, N. J.
 John H. Leisen, clay miner, Woodbridge, N. J.
 R. L. Clare, Federal Terra Cotta Co., Woodbridge.
 George E. Hoffman, Monument Pottery Co., Trenton.
 F. H. Burroughs, Star Porcelain Co., Trenton.
 Joseph Boughey, Hanovia Chemical & Mfg. Co., Newark.
 Richard Garmo, Star Porcelain Co., Trenton.
 R. L. Warburton, Celite Products Co., New York.
 D. F. Albery, Federal Terra Cotta Co., Woodbridge.
 August Staudt, Perth Amboy Tile Works, Perth Amboy.
 Chr. Mathiasen, South Amboy Terra Cotta Co., South Amboy.
 M. Brandt, Trenton.
 Louis Pohle, Monument Pottery Co., Trenton.
 C. W. Crane, C. W. Crane & Co., New York.
 J. M. Kreger, Monument Pottery Co., Trenton.
 F. B. Allen, Federal Terra Cotta Co., Woodbridge.
 J. M. Seasholtz, Porcelain Enameling Co., Reading, Pa.
 Karl Turk, Porcelain Enameling & Mfg. Co., Baltimore, Md.
 A. V. Bleininger, Bureau of Standards, Pittsburgh, Pa.
 H. W. Moore, Atlantic Terra Cotta Co., Perth Amboy.
 G. A. Williams, Atlantic Terra Cotta Co., Perth Amboy.
 W. J. J. Bowman, Trenton Fire Clay & Porcelain Co., Trenton.
 H. E. Maddock, John Maddock's Sons Co., Trenton.
 R. W. Greene, Kentucky Construction & Improvement Co., Mayfield, Ky.
 C. A. Hall, Pennsylvania Salt Mfg. Co., Philadelphia, Pa.
 A. E. Stangen, Philadelphia, Pa.
 Cyrus Borgner, Cyrus Borgner Co., Philadelphia, Pa.
 F. F. Frederick, School of Industrial Arts, Trenton.
 J. P. Goheen, Brown Instrument Co., Philadelphia, Pa.
 H. Schmidt, Roessler & Hasslacher Chemical Co., New York.
 W. Malsch, Roessler & Hasslacher Chemical Co., New York.
 George Simcoe, Electrical Porcelain Co., Trenton, N. J.
 H. L. Yearsley, Philadelphia, Pa.
 C. C. Cooper, Philadelphia, Pa.
 W. H. Fulper, Fulper Pottery Co., Flemington, N. J.
 J. M. Stangl, Fulper Pottery Co., Flemington, N. J.

W. A. Philips, Philips-Harper Co., Trenton.
 Charles A. Bloomfield, Metuchen.
 Fred. A. Whitaker, General Ceramics Co., Keasbey.
 Leslie Brown, Lenox, Inc., Trenton.
 W. E. Mueller, Mueller Mosaic Co., Trenton.
 J. F. Lenox, Trenton.
 P. G. Duryea, Cook Pottery Co., Trenton.
 Charles Howell Cook, Cook Pottery Co., Trenton.
 L. L. Byers, Abrasive Co., Philadelphia, Pa.
 H. A. Plusch, Abrasive Co., Philadelphia, Pa.
 R. K. Bowman, Trenton Fire Clay & Porcelain Co., Trenton.
 Mark Solon, Mercer Pottery, Trenton.
 James Darling, Trenton.
 A. C. Grainger, Trenton.
 W. L. Thompson, Economy Pottery Co., Trenton.
 A. E. Smith, Trenton.
 J. W. Mycock, Trenton.
 W. M. Shakespear, Thomas A. Edison, Inc., South Orange, N. J.
 C. J. Rukenbrod, Trenton.
 J. A. Schmerhorn, Trenton Porcelain Co., Trenton.
 T. A. Randall, Indianapolis, Ind.
 G. G. Dyer, secretary, Sanitary Potters' Association, Trenton.
 J. L. Jensen, Empire China Co., Brooklyn, N. Y.
 William Chell, Empire China Co., Brooklyn, N. Y.
 C. W. Kimble, Trenton.
 J. G. Bragg, Department of Conservation and Development, Trenton.
 F. D. Holmes, Thomas Maddock's Sons Co., Trenton.
 H. P. Humphrey, Washington Porcelain Co., Washington, N. J.
 W. A. Giebert, Seneca Clay Pipe & Novelty Works, Brooklyn, N. Y.
 S. E. Meagher, Robertson Art Tile Co., Trenton.
 Everitt Townsend, Robertson Art Tile Co., Trenton.
 T. H. Fetter, Consolidated Clay Co., Trenton.
 James Hamilton, Trenton Potteries Co., Trenton.
 R. P. Giebert, Seneca Clay Pipe & Novelty Works, Brooklyn, N. Y.
 J. McAllister, Trenton Fire Clay & Porcelain Co., Trenton.
 H. McAllister, Trenton Fire Clay & Porcelain Co., Trenton.
 C. Webster, Trenton, N. J.
 H. Lyons, Keystone Pottery Co., Trenton.
 LeRoy W. Allison, Eastern Representative, "Brick and Clay Record."



LEGISLATIVE ATTENTION GIVEN MEASURE CREATING FEDERAL HIGHWAY COMMISSION

LEGISLATIVE ATTENTION, from the standpoint of highway development, is beginning to center upon the National highway bill introduced in Congress by Senator Townsend. This measure provides for the creation of a Federal Highway Commission and the establishment of a national system of highways. It is presented by its supporters as a piece of legislation designed to bring about the construction of a national highway system within a reasonable length of time, to co-ordinate all the highway activities of the government, and to publish statistics and data on highway transportation, construction and maintenance for the benefit of all of the people.

Secretary Houston, of the Department of Agriculture, has raised a question as to the desirability of the proposed legislation. In reply to an inquiry from a City Chamber of Commerce, recently he stated, "that the roads in each section of the country vary in degrees of importance in the service rendered or that may be rendered to any particular locality, that the traffic conditions vary greatly in the different sections, that the State highway departments are better able to classify the roads than anyone else, that under the present Bankhead Bill the government is cooperating with State highway departments in the classification of the roads, and when the classification had been carefully made, and by agreement between the State Highway Departments of adjoining states, the roads of first importance generally meet at state boundaries." Having the above points in mind, the Secretary added that he could not see the wisdom of "substituting for the present co-operative program a plan which would commit or limit the Federal Government to the construction of two federally owned trunk line highways in each state."

H. G. Shirley, member of the Federal Highway Council,

and former State Highway Engineer of Maryland, stated on June 29 that the national highway bill does not in any way interfere with the co-operative plan now existing among the states with the Federal Government. It only substitutes for the Secretary of Agriculture the Federal Highway Commission, which, under the law, is charged with the duty of carrying out the provisions of the Federal Aid Law as now operated, and all other obligations or contracts entered into by the Secretary of Agriculture with the respective states. Therefore the effectiveness of the Federal Act plan, as argued by the Secretary of Agriculture, will not be interfered with in the least. The bill has further made it the duty of the Commission to make a recommendation to Congress as to the future operations of the Federal Aid Law after 1921.

CREATES A SYSTEM OF NATIONAL HIGHWAYS

"The National Highway Bill is entirely a new piece of legislation. Its object is to build in each state trunk line highways to the extent of not less than two per cent. nor more than five per cent. of the total mileage of the state, and to join them up with the main trunk lines of other states so as to make a complete national system connecting the entire country together. It creates a system of national highways, independent of the states, and highways that will carry interstate traffic, and that are necessary for the welfare of the country as a whole.

"Under the present Federal Aid Law the Federal Government has no power to select the roads in any one state that will be improved. The initiative is with the State highway departments, and in many instances is really with the counties themselves, who have to put up the state's portion of the money.

"The only limitations prescribed by the Federal Aid law are that the roads shall be rural post roads. When a road has met this condition, it is the duty of the Secretary of Agriculture to give his approval to its construction. All Federal Aid projects start with the forty-eight different State highway departments, and such projects are considered in forty-eight different lights, by forty-eight different men, holding forty-eight opinions, and it can be seen that a national plan that would evolve from such a procedure would be most chaotic, to say the least. It is also impossible under the Federal Aid law to so coordinate the forty-eight state systems that a plan would be finally evolved that would form a connected system thruout the country in a lifetime.

"The personnel of the State highway departments is constantly changing, and in a more or less degree the state highway systems are changed with the changing of the state highway officials. It is therefore out of the question to expect any connected system of roads between the forty-eight units, over which there is no supervisory power or anyone with authority to bring these forty-eight units into accord, or to direct them in improving those roads that would form a national system.

"Many of the states have laid out a system of state highways. A number of these highways are designated by law and have been laid down by the Legislatures, and are not always the roads recommended by the State Highway Departments. Even these roads are being constantly changed at each meeting of the Legislatures, so that the system as now laid down will not be the system as finally constructed. Many of the roads as laid out in the state systems on which Federal Aid is being expended, should not and never will be classified as national highways, but they constitute a large portion of the mileage of the plans that have been approved as a general state system, and on which there has already been granted Federal Aid.

"It will take many years to complete these state systems under the Federal Aid allotment, and at the present rate of construction it will be at least fifty years before there will be connected up a few roads in all the states approaching a national system, and at least one hundred years before the entire state systems have been completed and built up so as to form a general system of roads from which a reasonable national system could be established.

"We have seen the road work of the country expand from the township unit into the county unit; from the county unit into the state aid unit; from the state aid unit to the state unit; from the state unit to the Federal Aid unit, and it is but logical and reasonable that the final steps should be taken by establishing a Federal unit.

Many of the highway activities of the states, when they first entered into road construction, were in cooperation with the agricultural departments of the state or agricultural colleges, but it was soon found by experience that as this work expanded and grew, it became so important that it was necessary to provide an independent unit of the state government, whose duty it would be to look after this one important development of the state. Likewise, the day has come when the road work of the Federal government should be separated from the agricultural department of the government and put into the hands of a strong commission, who will devote its time and energy to this most important work of the nation, and place it in the position it should occupy to be the most benefit to the people.

"The advocates of good roads are only asking in this National highway bill that the roads should be put on an equal footing with the other departments of the government, so that they can be given proper consideration and study, for there is no other pursuit of the Federal government that will develop and bring prosperity to the country to a greater extent, for the money invested, than the speedy improvement of its important highways."



Page Tim L. Carr, Please

We have a request for the address of Tim L. Carr by one of our correspondents who is anxious to get in touch with him. Will Mr. Carr, or anyone knowing his address, communicate with *Brick and Clay Record*?



A Canadian Brick Man Who Keeps Busy

Charles A. Millar, besides directing the operation of two brick plants in Toronto, Ont., is interested in other industrial enterprises. One of these is an iron mine north of the Soo. Last winter he made several trips to the mine and on one of these a friend of *Brick and Clay Record* took some snaps. In one of the pictures the horses are on their way down the hill from the station starting to the camp. Going from the camp to one of the borings one day

he took an unexpected slide down hill. The camera was ready and hence Fig. 2. To keep out of mischief he sawed ice and chopped wood. Fig. 3 shows him at real work. He said that this reminded him of what he used to do in the days when wood was the only fuel used in the brick plant and he found he could chop with the best of the rest.



Special Uses of Brick Illustrated

The B. Mifflin Hood Brick Co. of Atlanta, Ga. has recently distributed a twenty-page 9½ in. by 12½ in. pamphlet illustrating beautiful designs of fireplaces, terraces, and residences. This brochure is printed on a very excellent quality of paper resembling India-tint dull coated enamel, stippled to a leather finish. The booklet is designated as "Hood's 'Pottery' Tile-Brick," and is very ably presented.



Three Unusual Pictures of a Prominent Toronto Brickmaker Whose Diversions Include Iron Mines, Chopping Wood and Snow Shoeing.

COOPERATION *in* INSURANCE

An Address Made at the First Annual Meeting of The Common Brick Manufacturers Association of America, La Salle Hotel, Chicago, February 13, 1919, Which Is Deserving of the Most Careful Reading by Every Clay Products Manufacturer

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I WISH, as a citizen, to add my word of welcome and satisfaction that so representative a body of producers has assembled here in Chicago. I wish to say also that I am not surprised that your officers, when they looked about the field of your interests to see what subjects would be uppermost in your thought, selected the subject of insurance as one, for I know of no industry which has done more to reduce the hazard of fire than the brick industry. The brick people of the country have done more to cut down insurance bills and to secure insurance economy in the cities and towns of the United States than any other class of producers, as you very well know. I hoped, even at this late hour in the afternoon, to bring to your attention some very practical and useful things, I do not intend to take much time to go over the philosophy and history of insurance, altho there are a few things about its origin and development that throw so much light upon the nature of cooperation that I shall take just a little time for that.

FORESIGHT

Foresight is the principal quality of a good business man, isn't it? Foresight. The ability to see what the troubles are likely to be, and to take some effective steps to meet them, to anticipate difficulties. I have heard it said that the art of being able to anticipate difficulties and meet danger is about all there is to success.

However, there are some contingencies, some great calamities and losses which no amount of foresight will entirely eliminate. Among them are fires, accidents, etc., which it is necessary to guard against, and insurance is a device which the business world has developed. That which would be a crushing loss upon an individual can be distributed over many, so that a definite loss which you can figure on takes the place of the possibility of a crushing disaster which would put you out of business.

Insurance goes away back into the earliest days of business—back into the Middle Ages. The earliest form of insurance seems to have been marine insurance, where a good many ship owners joined together to protect themselves against loss of their ships at sea. The ship-owning trade with distant ports was one of the principal sources of wealth of that day; great fortunes were made and immense losses might be encountered. A man could figure that if he could make ten successful trips with his ship he could afford to lose one ship, so great were the profits; but the business was not carried on by great companies as it is today; it was carried on by individuals. A man had to put all of his resources into that one ship and if he lost the ship on the first voyage he never would have a chance to make a second. If his first ship went down he would have to work at the mast for somebody else the rest of his life.

He would remind us of the two Swedes that went down to the ship. One was in plenty of time; the other was a little delayed. He came running down to the wharf after the steamer was fifteen feet from the dock. His friend said, "Yump, yump! You can make it in two yumps, Ole." He forgot that after Ole had made one jump he would be in the soup, and would never get a chance to make another. So with the shipowner. He knew he could make money if he could send his ship out ten times, but might be crushed with the loss of the first ship. So they got their heads together in an informal sort of way and agreed they would share the losses. You see, there was foresight plus cooperation.

THE NECESSITY FOR COOPERATION

They tell us that in Africa, the wild asses there, altho they had no way to combat the ferocious beasts that get after



He Forgot That After Ole Had Made One Jump He Would Be in the Soup, and Would Never Get a Chance to Make Another.

them, have learned to put their heads together and turn their heels out and kick. That is an example of cooperation. That after all, is what men have to do everywhere. I heard some one here, while I was waiting, express the sentiment

that with the dangerous business difficulties confronting you today, there is necessity of your getting together and kicking. That is what we all do when the necessity for cooperation confronts us.

Now, the trouble has been that those who join in purely cooperative measures have not understood the business. These ship owners who insured their ships jointly did not know the technique of insurance, and consequently private enterprise took over the business, private companies and private insurers, private Lloyds, and they made greater headway than the cooperative insurers did. Why? Because in the cooperative plans it was nobody's business in particular to understand the science of insurance. It has come, as you know, to be one of the great sciences of the world, a science which it has been my business to study—the science of contingencies; the science of understanding how many chances there are out of a hundred thousand of a certain



I Heard Someone Here Express the Sentiment That with the Dangerous Business Difficulties Confronting You Today, There Is Necessity of Your Getting Together and Kicking. That Is What We All Do When the Necessity for Cooperation Confronts Us.

happening. This science lies at the very basis of insurance, and without such knowledge as that it can't be carried on successfully. Consequently, companies were organized that were capable of taking over the business of insuring. They did understand it, made a study of it, and could afford to study it, and spend their lives at it. Because they understood it better and conducted it on a business-like basis, cooperation has suffered in comparison with individual enterprise; individual enterprise has taken the field.

In the fire insurance business today, for instance, most of you depend no doubt upon regular insurance policies issued by stock companies. Is there anything wrong with that system? Figures will tell; and here we get right down to the crux of the situation, the important item to know and to understand: Out of every one hundred dollars paid for fire insurance to all the stock companies of America, there are \$43.50 absorbed in expense and profits by the fire insurance companies.

Now, I don't blame them for that. Human nature is so

constituted that everybody wants more money. Everybody wants his salary increased, and in any sort of business, you know well enough, gentlemen, the money will ooze out of the keyholes and evaporate up thru the roof if you don't sit on the safety valve with your veins full of ice water to prevent it. It seems to me that fact alone is all that I need to state, that for the last ten years, combining all the companies into one array of statistics, as the Insurance Year Book shows, year after year, with scarcely any variation, forty-three dollars out of every one hundred that has been paid for fire insurance has gone into expenses and profits, leaving about fifty-six or seven dollars out of every one hundred to go to pay losses.

PREVENTING THE TOO HEAVY TAX

Now, insurance is a tax, a tax put upon your business community to help out the man who suffers the loss. That is the philosophy of insurance, isn't it? And when a tax upon the whole community for a certain helpful system costs too much to carry out, it is time that those who put up the money make some inquiry as to whether that can be prevented.

Now, I think perhaps I cannot do anything more serviceable this afternoon in the short time that is left than to describe methods that have been used, and fortunately, I am able to do this out of some personal experience. I have been called upon as counsellor and auditor to understand in detail some efforts that men in certain lines have made to economize on their insurance. I am speaking particularly of fire insurance, and I might say that the same principles would apply to a good many other kinds of insurance. I can hardly take the time to speak of the distinctions between them, and what particular kinds of insurance lend themselves most readily to cooperation of this kind.

Strangely enough, the most scientific plan that has ever been adopted, the one that has worked out the best for cooperation in insurance, is almost the counterpart of the oldest form that we have, that which I described a little while ago, where a number of men engaged in the same line of business, like the ship owners of former centuries, get together and simply agree that the loss shall be distributed in mathematical ratio amongst them.

INTER-INSURANCE

What is inter-insurance? It is an agreement by which a body of men in the same calling agree to insure each other, employing an attorney to attend to the details. I do not use the word "attorney" in the sense of a lawyer, but an "attorney in fact." You gentlemen understand that for certain business purposes any one can appoint an attorney in fact and empower him to act in carrying out certain business transactions. The members employ an attorney to attend to details and rebate to each other at stated periods all the money saved by this direct, sensible, economical form of mutual cooperation.

The subscribers, or policy holders, do not form a "company." They do not buy insurance. They are not in the insurance business. They merely exchange fire indemnity by private contract—each with the rest. For other kinds of insurance the principle involved would be the same.

Neither does their "attorney" sell insurance. His function is that of an employe to handle the details of the inter-related transactions.

That is what one representative inter-insurance bureau has accomplished for its policy holders. During the past eight years the subscribers at this bureau have received back more than \$1,000,000 in fire losses. Every loss has been settled promptly and to the entire satisfaction of the policy holder. The subscribers have also had returned to them

about \$600,000 in actual cash savings, compared with what they would have paid the stock companies.

Now, here is an important point: In addition to saving this \$600,000 to its policy holders, the active cooperation of those at the bureau resulted in reducing the stock company rates an average of twenty per cent. compared with rates in force before this new form of protection was available. For illustration, most of the great civic communities have boards of underwriters. Certain restrictions and rules that discriminated against this particular industry have been modified. The knowledge of what has been done in one place has been conveyed to other places, so that all the members of this association profit thru the skill and knowledge and technical training of those in charge of the insurance co-operation.

The efforts of this bureau also resulted in the correction of many injustices in rates, rulings and exactions which existed before the policy holders adopted this form of self-protection.

The subscribers at such a bureau organized in the clay products manufacturing industry could afford each other an opportunity to carry their own insurance, thereby eliminating all elements of waste and thus securing for themselves fire insurance at actual cost, after having thoroly satisfied themselves as to the safety and economy of the plan, and the efficiency of the management.

You might get the impression from what I have just read here that this is an easy thing for you to do; but I regret to say that like other things that are worth while, it is not the easiest thing in the world to accomplish.

The difficulty is to secure the cooperation. It is not an easy thing to get the necessary five hundred or a thousand men to unite. If they will simply unite in some organization of this kind and commence the operation of a movement of that sort, it would be easy. But experience shows that altho much enthusiasm may be manifested at a meeting like this, when you come to putting an organization of that kind into actual operation there is so much reluctance to join—to be the first to start into a new movement of any kind, that it has been found exceedingly difficult to get the matter under way.

So that you see, gentlemen, the difficulty is up to you; that while this plan can be pictured, outlined and made clear, the difficulty is to secure the cooperation to get the necessary number to unite so that the plan may meet with success.

There is no difficulty in finding the man trained to manage the enterprise, if a sufficient number of men in one line stand ready to cooperate.

ABSOLUTE SECURITY IN THIS FORM OF INSURANCE

The wealth and financial standing of men in a line like yours make inter-insurance absolutely secure, as the payment of each honest loss is guaranteed by a large number of high-rated business concerns, whose combined capital figured more millions of dollars than can be shown by the largest fire insurance company.

Each subscriber agrees, under a legal and enforceable contract, to pay his proportion of the losses as they occur. As a guarantee of good faith, and to facilitate quick settlement of losses, each subscriber deposits with the attorney his proportionate share of a fund known as the guarantee deposit for the purpose of meeting fire losses and current expenses. No one could become liable for more than 150 or 200 per cent. of the premium in one year. The very fact your expenses could be conducted at a cost not to exceed twenty to twenty-five per cent. while the stock companies exceed forty-three per cent. as shown by statistics, leaving you in the neighborhood of eighty dollars out of every hundred dol-

lars to pay losses, while the insurance companies only have \$56 on the average to appropriate to the payment of losses, shows with certainty that a saving will result from that form of cooperation.

The losses resulting from dishonesty, carelessness, spite, and so forth, known as the moral hazard, can largely be eliminated by cooperation.

The losses incident to conflagrations, or great fires that destroy large areas in the same town or city or county, can be eliminated because as a rule the plants are widely distributed.

The inter-insurance bureau affords an opportunity to come in and insure with a preferred class of risks in your own line where the moral and other public hazards are eliminated and where you contract to pay only your proportion of honest fire losses occurring among concerns in your own class and engaged in the same line of business.

INSPECTION BY TRAINED EXPERTS

The inter-insurance bureau renders another service of great value. This service would include the frequent inspection of plants by trained experts who are specialists in your line and who are competent to advise safeguards of inestimable value. Instead of being compelled to study the technique of fifty different enterprises, they would specialize on your particular line.

You would have the examination and close study of all the fire insurance policies held by subscribers in stock companies. In an amazingly large percentage of cases, examiners discover that such policies are improperly executed or that they contain restrictions or omissions that render them practically or largely worthless.

The cooperation of a large number of firms, all in the same line of business, and the fact that they continuously insure each other against loss over a period of years, creates a "law of averages" and ideal insurance conditions. The natural result would be an average annual saving of from thirty per cent. to fifty per cent.

WORKMEN'S COMPENSATION

There is one form of insurance losses which you gentlemen are very much interested in that is difficult to cover thru cooperation, and I think you will see the reason in just a moment. I refer to Workmen's Compensation. Fire losses in all the first class brick plants of the country would be under very nearly identical conditions in all the different states, but workmen's compensation has developed in widely different ways in different states; the laws are altogether different, and it would be an extremely confusing process to organize a cooperative movement to insure workmen's compensation in twenty-five or thirty different states. The Illinois Manufacturers' Association has a department which insures its members against workmen's compensation in the state of Illinois. Some other states have similar organizations, but unless you have a uniform set of laws the difference in hazard is so confusing that an organization covering many states would find it almost impossible to conduct business. Fire insurance, credit insurance, nearly all the other forms of insurance which you gentlemen find it necessary to carry, would lend themselves readily to this method of cooperation; and the question of whether or not it is feasible, whether or not you could enter into it, is purely a question of whether a sufficient number can unite without extreme expense—the expense of going and urging every man to join.

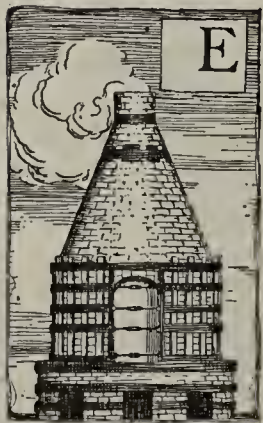
So the question is whether or not a sufficient number in one line can be induced to join in the movement. If they can, cooperation is possible, feasible and economical.

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products Such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

A PUMP INSTALLATION THAT CUT LABOR COST IN SANITARY WARE PRODUCTION



or other operation, skilled or common labor, or what not so why change?

But on the other hand, isn't this rather a foolish way to view matters? Isn't it this lack of vision, initiative, or call it what you may, that lets some one else forge ahead, permits competitive organizations to increase production and reduce overhead, and allows them to use better methods of

EVERY INDUSTRIAL ESTABLISHMENT has certain conditions of operation that are capable of improvement and betterment, and the ceramic plant is no exception to the rule. We are prone, at times, to stick closely to the old way of doing things—it is known as a sure method, let us say, costs just so much, can be done in a fixed period of time, and every factor is thoroly understood, at least we so believe, whether it embody machine



Fig. 1. Grinding Wheel Used to Smooth Off the Rough Surfaces on Sanitary Ware. It Is the Source of the Sand Which Is Disposed of Effectively by Means of a Steam Pump.

promoting and selling, with inner-office and factory systems to correspond? The answer is self-evident. Time moves, the world progresses, things change, and an industrial plant, just as a man, can often progress thru change.

One of the secrets of real advancement is an open eye

for betterment at all times. In the ceramic and other industrial plant it means a careful investigation of what is being done with what might be done; in other words, a comparison of mechanical appliances and means, old and new, of various features of works operation as allied with suggested plans, of labor under this or that condition of service, and so on.

Just ever so often we see how foolish we were when we learn a better way; it is then that we appreciate what a little progress in the right direction means, and it is then that we fully understand the value of being watchful,



Fig. 2. Spout Conveys Thick Gummy Grindings From Abrasive Wheel Into an Adjacent Collection Pit.

inquiring and energetic. Greater economy and efficiency in plant production are not mysteries to some as they are to others; it is simply the knowledge of knowing exactly what is to be done and exactly how to do it. The answer is in the annual statement of affairs, for every penny or two saved in manufacture in a certain period helps materially in the end that for which every plant seeks—profits and surplus.

COSTLY SAND REMOVAL

One of the difficulties encountered in the operation of the sanitary ware pottery is the removal of waste sand from the rubbing beds or machines as used for leveling the different pieces. This is seemingly a minor item of production, sort of a subsidiary factor, but it is far from such when trouble begins, for it is a phase of operation that can easily disrupt the course of manufacture and prove a costly and distressing matter.

This sand waste, usually, is drained from the machine thru a spout and trough, the latter reaching to a sand pit; when the pit is full it is emptied by hand-shoveling. This was the method previously employed by the Monument Pottery Co., Trenton, N. J., manufacturer of sanitary earthenware, and producing a high-grade material in this line.

The grinding machine used for this service is shown in the illustration, Fig. 1. It consists of a cast iron wheel, 16 ft. in diameter, and weighing about 5 tons; this wheel is

mounted on a vertical shaft, and operated by electric motor drive. Right here it may be mentioned that by means of an effective drive arrangement, comprising a pair of gears and return belt drive, a 15 horsepower motor is used for this service—certainly no waste of power at this point.



Fig. 3. Pump, Which Is Very Compact and Does Not Occupy Much Room, Is Suspended From Ceiling Directly Above the Sand Pit.

This machine has a carrying capacity of about 15 pieces of ware of various kinds, such as pedestals, tanks, fountains, bowls, etc., as set forth in the illustration. The primary factor, as noted, is to level the material, smoothing off the rough surfaces of unexposed parts. Sand of fine grit quality is thrown on the grinding face of the wheel as it operates, the supply being located in a box above the wheel, as will be noticed in the picture. This sand is immersed with water as the grinding wheel revolves.

As the sand, now wet, fulfills its function, it drains off by gravity flow from the rubbing bed into a wood spout, and thence into an adjacent sand pit, illustrated in Fig. 2. This picture also gives a comprehensive idea of the thick, gummy nature of the mass aggregate. An overflow allows for the draining off of the free water, reducing the moist sand to a still more glue-like substance in the pit, stubborn and difficult to handle.

DISADVANTAGES OF FORMER SYSTEM

This sand pit measures about 4 ft. by 4 ft., with total depth of 8 ft., and is covered with boards at the floor level, except when being cleaned. Taking the sand mass from this pit at regular intervals, as required, necessitated the employment of three or four men, engaged from 7 a. m. to 4 p. m., or an equivalent period of time. The job was accomplished by shoveling the mass into buckets and carrying these buckets outside of the plant for emptying.

With the cleaning of the pit between the hours noted, it was necessary to stop the machine for the time, causing loss and delay in this department of production. When possible, the men were hired to do the work before or after regular plant hours; this meant overtime wage rates, and made the proposition a very expensive one. Either plan, at best, was very undesirable. Moreover, the very nature of the task made it exceedingly difficult to secure men who would do the work; invariably, those who had been "on the job" once would take a determined stand and refuse to do it a second time, even under the risk of being discharged.

As the company now states, it hardly blamed the men, in a way, in assuming such an attitude, as the work, altho it had to be done, was hardly fit for human labor. The material, resembling a sort of quicksand, was not only difficult to handle by shovel, but caused the men to slide about in the pit as they engaged in the work. Again, under this system, the conveying of the buckets or tubs to the point of discharge was no mean task, and at the same time required a sprinkling of sawdust over the floor and a general cleaning up in the department after the pit was emptied. This cost time and money, as well as causing distress and inconvenience.

Franklin Wolff, treasurer of the company and in charge



Fig. 4. A Stream of Water Is Sent Into the Well to Loosen the Material. This View Shows Also the Hose Lines Overhead and the Pump Head About to Be Submerged.

of mechanical operation at the plant, sought means of overcoming the trouble, with the result that it was decided to make a Pulsometer pump installation.

PUMPING THE SAND FROM THE PIT

The contrast between the former method of cleaning the sand pit, just described, and the new way is little short of startling. The steam pump is suspended above the pit, as

set forth in Fig. 3. This illustration gives a clear view of the pit and indicates the difficulty in holding the gummy sand mass on a shovel.



Fig. 5. Interior View of Grinding Department Showing Hose Line and Pump Installation.

The Pulsometer type pump, as is generally known, is a vacuum steam pump in one small compact unit. It has no mechanically operated parts, being arranged with three enclosed check valves, which operate automatically. There are no packings, glands, springs, pistons, etc. It can be readily moved about to such location as desired, and suspended by a rope or chain at the point required.

The action of the unit consists in alternately emptying and filling the two pumping chambers, and these operations continue while the pump is furnished with steam and water. The alternations follow so rapidly and with such regularity, that the discharge is practically continuous. The ball, acting as the steam valve, oscillates from its seat at the entrance of one chamber to the corresponding seat at the entrance of the other, providing exact steam distribution at all times. The pump by means of its simple design can handle water heavily laden with sand, and this is the secret of its success in ability to empty the pottery sand pit.

OPERATION

The pump is operated at the Monument Pottery by means of a $\frac{1}{2}$ -inch steam line connection, while the head end is provided with a 2-inch armored hose line, this being the most



Fig. 6. Refuse Travels Thru Hose Beneath City Street and Is Finally Discharged at Point Shown in Accompanying View.

serviceable type of hose from breakage and service stand-points. This hose line and pump head is shown in Fig. 4, which illustrates the initial work in connection with the pit cleaning under the present plan. The pump head is about

to be submerged, while a stream of water is sent into the pit to loosen the material.

This latter is a highly important matter, in that it provides the starting basis for the pump operation. This hose line, with 1-inch nozzle, throws the jet of water that inaugurates the pump movement. In operation, the pump first throws clear water, then a little more laden with the grit, and as the work proceeds, it picks up the gummy mass bodily with the water and forces it to the point of discharge. Before the completion of the job, the pump is practically throwing a mud.

The discharge line from the pump, similarly of armored hose, is suspended on the ceiling of the grinding room, as set forth in Fig. 5. This illustration shows the entire line and pump installation, extending from the pit, at the extreme right of the picture, to the building wall at the left. On reaching this latter point, the hose line connects with an underground pipe, reaching across the thorofare, known as Ingham Avenue, on which the plant is located.

REFUSE DISCHARGED IN ARTIFICIAL LAKE

On the other side of this street, the underground line is again connected with a hose, which extends to the point of discharge. This is plainly illustrated in Fig. 6, which



Fig. 7. The Material Is Discharged Into an Artificial Lake Located on Company Grounds.

shows the pottery, street width, and discharge end. This emptying point is at an artificial lake on company property on this side of the thorofare, shown in Fig. 7. The total distance from the sand pit in the grinding room to this point is about 125 ft. The sand banks noted in this last illustration have been formed by the deposited material from the pit.

The different accompanying pictures give a comprehensive idea of the operation from beginning to end and practically tell "the story" in themselves. The entire work is the last word of simplicity—just the turning on of the steam line to start the pump, the placing of the head in the pit, and the injection of the water, as previously noted.

By this means the sand pit can be emptied in from $1\frac{1}{2}$ to $1\frac{3}{4}$ hours, and moreover, during working time without disturbing regular operation. Under ordinary conditions, the pit is cleaned about once a week. The cost of this entire installation aggregated about \$200, and it paid for itself within a month.

From the investment standpoint alone, the investment has proved decidedly profitable, of course. Any equipment or apparatus that will return its expense in a month, two months, a year or more, is well worth its cost, and particularly, as in this case, where it brings ease, convenience and efficiency in service. And beyond these considerations,

there is much satisfaction to be derived in eliminating severe tasks that try the patience of employer and energetic employe, with defined advantages to all.



Domestic Pottery Demand Heavy—Little Pottery Now Being Exported

Demand for domestic pottery is excessively heavy. There is very little goods being received from England and France, and, of course, no china is coming from Germany. Japan is, however, sending no small amount of ware into the United States, and this business is growing. It is cheaply made, because the Japanese pottery workers do not make as much in six months as some American pottery workers make in a week.

The English and French potteries are "shot" to a greater or less extent, and their small production today is being taken by their home and Colonial trade. Quite frequently inquiries are received by American pottery manufacturers from English and French merchandise agencies asking for lines to sell in those countries. Only a small amount of American-made pottery is now being exported, because the home demands are so heavy. However, Canada is a very liberal buyer of American pottery, and the English manufacturers have already expressed some fear that their former large trade in this line in Canada will be lost in a measure to the United States.

Some of the American potteries are oversold for this year's shipment, so it is reported. This means that other potteries will also soon be so flooded with business that they will hesitate to offer any quotations for 1919 deliveries.



Manufacturers Have Heaviest Volume of Generalware Pottery Business Ever Experienced

The summer loaf in the generalware potteries of the United States was exceedingly brief this year. It lasted from July 3 to July 7. Here and there a plant was idle for a few days longer in order to complete repairs. Work in these plants was never so plentiful, neither have orders been so numerous. There is no denying the fact that the generalware pottery manufacturers of the country have the heaviest volume of business on file they ever experienced at this particular season of the year. That such activity in business will continue thruout the year is the general admission of those who are in close touch with the situation. Buyers who failed to take advantage of a slight lull in the market early in the spring are now regretting their action. Prompt deliveries cannot be promised on any new business, on account of so many back specifications on file.

Some of the buyers delayed anticipating their future wants, believing that by so doing they would have a lower market, but in this idea they were sadly fooled. Conditions have been the reverse if anything. Manufacturers are unable to guarantee fall prices on account of the present wage scale in effect with the National Brotherhood of Operative Potters expiring October 1. Many are of the opinion that wage increases will be authorized at the forthcoming joint conference between the committees representing the manufacturers and workers. Delegates representing the workers went into annual convention at Atlantic City, July 1, and sessions did not close until July 12. No statements have come out of the convention relative to the demands that will be presented, altho it has been strongly intimated that the workers will want advances ranging from possibly 10 to 25 per cent. Back in 1915 the wages of the workers were increased to a varied range of from 35 to 45 per cent. Now comes a plea for additional advances, which, if ultimately authorized, as

a result of joint conference, will undoubtedly cause further increases in the selling lists of all generalware plants.

It has been intimated in some quarters that the manufacturers will not guarantee present prices after September 1, and that thereafter new business will be accepted only on the condition that the price prevailing at the time of shipment will be maintained. The buyer will, of course, have the option of either cancelling his order or allowing it to remain on file and shipped under such conditions.



Potteries of all kinds at Trenton, N. J., are beginning to feel the effect of the building movement. Things are picking up in fine shape, and near-to-normal capacities are being reached in a number of instances. The tableware and china plants are exceptionally busy, the demand for material is far in excess of the available supply, and orders are now being booked for future deliveries. The electrical porcelain plants are also operating at full tilt, and there is a big call for different specialties from the different electrical manufacturers. The sanitary ware plants, which have suffered rather severely thru the inactivity in construction work, are beginning to increase operations and the 50 per cent. capacity average, chronicled in *Brick and Clay Record* of a few weeks ago for these potteries, is giving way to 60, 70 and 75 per cent., with a prospect of larger output at an early date. At the same time, many local plants have been carrying heavy stocks, and production will not be normal until these begin to move. Thruout the industry, however, there is an air of optimism and confidence, and the general belief is that good, prosperous times are on the way.



The Empire China Works, Greene Street, Brooklyn, N. Y., is now operating its plant on both day and night schedules for the production of porcelain spark plug cores and other small electrical porcelain specialties. The company is devoting operations exclusively to this character of work, and thruout the entire war period was very busy. With the return of peace there is no change in conditions and, in fact, the demand is constantly on the increase. A new building has recently been completed to provide facilities for extended operations, and plans have just been filed for the installation of a new elevator in one of the plant buildings. If ground were available in this vicinity, it is likely that the company would build an addition to the factory for largely increased capacity, now so badly needed. The plant at the present time is giving employment to about 250 persons. James L. Jensen is assistant manager.



In connection with the visit of Charles S. Maddock, Jr., of the Thomas Maddock's Sons Co., Trenton, N. J., to Salt Lake City, Utah, to be in attendance at the annual convention of the International Rotary Club, mentioned in the July 1 issue of *Brick and Clay Record*, a novel idea was arranged to call to mind one of Trenton's leading industries—ceramic wares. Mr. Maddock had about 600 bone china Rotary wheels manufactured at the Maddock pottery for distribution among the delegates, and these china wheels made a decided hit. They were received by those in attendance with great appreciation, and with evident intention of constant preservation.

The Inland Empire Pottery Co., a newly formed Spokane concern, closed a lease on the \$30,000 factory of the American Fire Brick Co. at Spokane, Wash., on June 17. Over 5,000 articles of pottery are being turned out each day at the plant, which has been in operation for several weeks, with a crew of fifteen men. The capacity of the plant and the force of

workers will be increased rapidly. The company is composed entirely of Spokane men, the principal stockholders being P. H. Lippy and I. S. Liddell.

Herbert Goodwin, one of the most widely known pottery managers in the country, and at one time managing a pottery plant in Mexico, is now in charge of the plant of the Salem (Ohio) China Co. This property was recently acquired by the Sebring interests, of Sebring, Ohio, who bought it from Patrick McNicol, of East Liverpool, Ohio. A number of improvements are being made to the plant, and the capacity will ultimately be increased.

A dozen or more new dinner shapes will be placed before the trade for early delivery in 1920, according to present indications. The majority of these shapes will be plain designs, which will permit the widest latitude in decorating. Inquiries for new shapes are still being received by the modelers, both in the East Liverpool, Ohio, and Trenton, N. J., districts. Here and there additional pieces will be added to lines already established.

The Shaw Pottery Co., Trenton, N. J., with plant on Parker Avenue, has filed a petition in bankruptcy with liabilities listed at \$41,037.17 and assets at \$39,032.25, of which \$30,000 is stated to be the value of the company's plant, including equipment, raw materials and finished product. James Shaw is president of the company. The creditors include a number of ceramic concerns in the Trenton district.

At Erwin, Tenn., the Southern Potteries Co., which is under the management of Edward J. Owen, plans extensions to its capacity. It is possible that this firm will add a number of kilns ere another year passes. The plant is the only generalware pottery south of the Mason-Dixon line, and has been operated to capacity since it was started several years ago.

Decorations on dinnerware for 1920 will consist in the main of border effects, altho a number of spray patterns will be offered the trade. Orders for the decalomania have been placed in the majority of instances, and in one particular case one manufacturer placed an order valued at \$30,000, which is a new high record for one specification for decals.

Production of hotel ware will be increased this year thru the starting of operations this month at the plant of the Chelsea China Co., at New Cumberland, W. Va. This concern has been financed by Wheeling (W. Va.) interests. The company has about completed construction of a continuous kiln, which will be the first to be used in the Ohio Valley for generalware firing purposes.

Fire of unknown origin did considerable damage at the plant of the Van Briggles Pottery, Colorado Springs, Colo., on June 25. According to Charles B. Lansing, proprietor, work is going on as usual in the plating department and the section of the plant where the solar tuberculosis apparatus is manufactured.

The plant of the Bedford (Ohio) China Co., which is under the management of C. P. Reddrop, of Cleveland, Ohio, and which has been making plain white hotel ware since it started operations last January, is now going into the decorated line of ware.

The Porcelain Enamel & Mfg. Co., O'Donnell and Eighth Streets, Baltimore, has arranged for the erection of a one-story addition to its plant, about 100x110 ft., to cost \$15,000. The structure will be used for increased operations.

The National Helfrich Potteries Co. has been incorporated at Evansville, Ind., with a capital of \$250,000. H. F. Weaver, Aaron M. Weil and M. D. Helfrich are named as directors.

It is reported that the Florentine Pottery, a new institu-

tion for Cambridge, Ohio, will be in operation shortly. It will manufacture sanitary ware.

The Onondaga Pottery Co., Syracuse, N. Y., manufacturer of tableware, etc., has increased its capital from \$750,000 to \$1,500,000.



Reorganization of Consolidated Brick Interests Is Completed at Cleveland, Ohio

Completion of the reorganization of the allied brick and building material concerns in Cleveland, Ohio, into the Cleveland Builders' Supply & Brick Co. is announced. The details of this consolidation show that the movement brings together some of the biggest men in their respective branches of the clay products and building material business. Not only are some of the most prominent individuals in distribution in the industry identified with the new organization, but those expert in production also have been brought in.

To members of the clay products and building supply businesses they will be recognized as having headed big enterprises until this bigger enterprise eclipsed them. Department heads follow:

E. W. Farr will be executive director; H. J. Farr will be manager of clay; R. J. Dawson will be manager of shale; John M. Truby will direct sand and aggregate production and navigation; J. F. McKay will be production manager of face brick; Herman Schmitt will be distribution manager; and C. H. McAllister his associate. Equipment and deliveries will be under their direction. James Purches will be general superintendent and Arthur King assistant superintendent.

E. J. McGettigan has been appointed general salesmanager. Frank Allenbach will be director of aggregate sales; W. F. Eirick will be in charge of public contracts. James E. Morrissey will manage the brick department; J. M. Beville will have charge of the tile department; A. T. Hatch will be fire brick department head; E. S. Borland will be manager of specialties; Frank B. Te-Loeken will be in charge of the order departments. Other headquarter's executive positions will be held by C. H. King, as office manager; F. E. Richards, assistant; J. M. Cummings traffic manager; Carl Deering, assistant; J. J. Elwood, paymaster; Lawrence Koblitz, purchasing agent; H. W. Conway, auditor.

The latest development in the consolidation aside from the appointments mentioned, is the acquisition of the plant of the Metropolitan Paving Brick Co., at Willow, Ohio, from F. H. Chapin, formerly manager of the Hydraulic-Press Brick Co., and now head of a chemical company here. The Metropolitan plant had been under lease to Mr. Chapin for some time. It is here where face brick will be made, under the direction of Mr. McKay. It will be the only face brick producing plant within the switching limits of the city of Cleveland. An excellent grade of face brick can be made here, according to Mr. Chapin, because of the high grade shale available.



1918 Manganese Production Exceeds Highest Previous Record

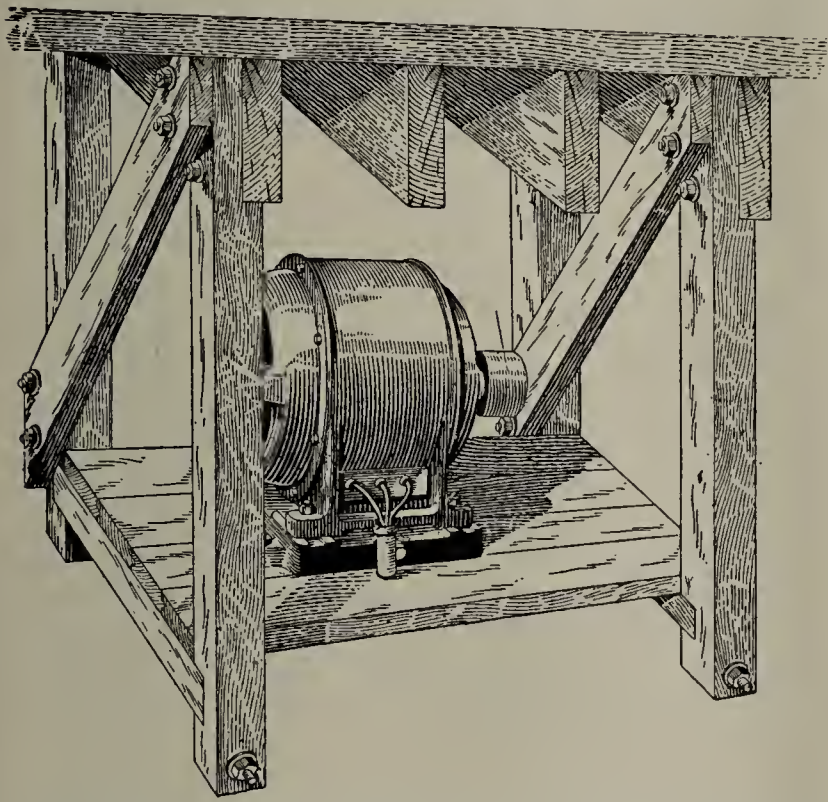
According to D. F. Hewett, U. S. Geological Survey, the domestic production of manganese ore in 1918 was greater than in any preceding year. Shipments of high grade ore during the last quarter of the year were 75,465 tons, against 90,738 tons, 82,481 tons, and 55,682 tons for the third, second and first quarters, respectively, and the total for the year was, therefore, 304,366 tons or two and a half times that for 1917, highest previous record.

The SUPERINTENDENT

Helpful Hints for Practical Men Whose Problem is Maximum Production With Minimum Cost

Overhead Wooden Platform for Motors

When floor space is at a premium, it may be desirable to mount electric motors on platforms suspended from ceilings instead of supporting them on the floor. In the illustration are shown the details of a satisfactory support for motors of capacities up to 30 h. p. Four 4x6 in. timbers bolted to the floor joists sustain the platform floor. To these



Sketch Showing the Structural Details of Platform for Electric Motor.

vertical pieces are clamped two 3x4 in. cross-timbers which act as beams to which the 2 in. tongue and groove flooring is spiked. Two 1 in. tie-rods bind together the lower ends of the vertical supports. Where the side pull is great, to insure against shifting, diagonal braces, as shown, may be used to prevent lateral displacement.—L. M. Harrison.

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A Remedy for Lamination

The following item was written by Raymond M. Howe and appeared in a recent edition of "Refractories," a magazine published by and for the members of the Refractories Manufacturers' Association. The text of the article is of great interest and importance to the whole clay working industry as well as the fire brick field, hence its publication here.

About a year ago, several kinds of refractory brick were tested at the Mellon Institute by the so-called "dipping test"—a test which reveals quickly and accurately the existence or non-existence of lamination. As a result of this experimental work, the writer became convinced that the lamination present in some machine made brick in conse-

quence of the friction of the die (and of the method used in applying the necessary pressure to the clay to make it pass thru the die) might be remedied.

Subsequently, brick were tested which had been repressed on the 9 by 4-inch side—or, as the phrase has it—"on the flat." This repressing was done in order to break the bond, the face or side of the brick being changed to 9 by 4½ inches.

TESTS MADE ON REPRESSED BRICK

The tests showed that brick repressed in this way were no more resistant to the "dipping" test than were those which had not been repressed. Either variety lost its corners when the several samples had been heated and "dipped" six times.

It was then conceived that, if such brick were repressed on the 9 by 2½-inch edge, the increased shifting of the clay particles would possibly remove this lamination. In order to prove this point, brick which had been repressed on either the side or the edge, were secured from several manufacturers and subjected to the "dipping" test.

Brick A, B and C were all repressed on the 9 by 4½-inch side. A and B were dipped into four inches of cold water three times, after being heated one hour at 1,300 degrees C. Brick C was cooled in air five times, after being heated in the same manner. The two methods of cooling were used in order to meet any criticism as to the manner of testing.

Brick D, E and F were made by repressing on the 9 by 2½-inch edge, all other steps in their manufacture being the same as A, B and C. D and E were dipped in water three times in the same way as were A and B, while F was cooled in air five times the same way that C was tested.

A, B and C each lost about eleven per cent. of their weight during the test, while D, E and F, altho somewhat checked, lost none. This checking was not necessarily due to the manner of manufacture, but rather to the extremely dense structure of the brick.

These tests show clearly that edge repressing of machine made brick removes lamination to a very great extent. They are substantiated by the fact that one manufacturer, after making some test brick, adopted the edge repressing process as a part of his regular procedure. This company has been edge repressing now for nearly a year.

APPLICATION OF EDGE REPRESSING

Where a more open brick than the one being made is desired and where it is important that the manufacturing cost be not increased, an edge repressed machine made brick should prove very satisfactory, since the complete breaking of the bond results in producing a more open brick with no increased cost of production. It is doubtful, however, whether such brick would be improved for conditions requiring an extremely dense product.

A second application is also conceivable, which applies

to plants where auger machine and hand made brick are manufactured. In case the "hand made" mixture is sufficiently plastic to be worked by pugging, a rather soft column could be run out of the die and in the usual manner. The brick from this point could be treated like hand made brick. As they became dry enough for repressing, this could be done (on edge) and a semi-hand made product secured. The advantage to be gained in this case is in the utilization of the speed of an auger machine for making the brick to the necessary size. The ideal batch for this process, in the writer's opinion, would be one consisting of about fifty per cent. or more of plastic clay. This high plastic content would not require extensive wet pan treatment in order to develop the necessary bond, as this would be secured by pugging. Furthermore, the flint clay or grog content has a tendency to open the structure of the brick to a large extent. It would also exert a "cutting" action in breaking up any possible lamination due to pugging or shaping.



A Chart to Help Production

The accompanying chart is taken from one of Mr. Estes' articles on "Managing for Maximum Production" which is appearing in "Industrial Management." It will be remembered that the above author is a member of the firm of L. V. Estes, Incorporated, industrial engineers.

With the serious labor shortage and the higher operating costs now facing our industry, the margin of profit will be found more than ever in operating efficiency, and recognition of this one aspect of the problem gives the chart a peculiar value at this time.

A chart drawn up from this one as a model would be of

WHAT TO DO IN MANAGING FOR MAXIMUM PRODUCTION <small>L. V. ESTES INCORPORATED Industrial Engineers 300 N. Dearborn CHICAGO</small>			
ORGANIZATION	DESIGN	LABOR	PRODUCTION
1 Study and record the conditions that exist	1 Study material as to a quality b quantity	1 Study relation of management and workers	1 Analyze the production problem as a whole
2 Analyze and determine what changes are to be made	2 Study for changes to effect economy in producing	2 Develop spirit of democracy in dealing with workers	2 Determine quantities of each product to be made
3 Plan these changes in detail	3 Record existing conditions with notes for improvement	3 Study and classify trades employed and positions to be filled	3 Determine methods, machines, and tools to be used
4 Make written record of required organization plans and policies	4 Plan details of improvements and record such plans	4 Determine just base rates for each position	4 Determine time for each operation
5 Carry these plans into effect	5 Carry plans into effect being sure each step is permanent	5 Select workers on basis of task to be performed	5 Supply schedules to the factory
6 Provide for their being continued in effect until superseded by other and better plans	6 Provide for further study and improvement as to design	6 Develop and install methods for training workers	6 Start the work and record its progress and cost
		7 Apply wage-payment method based on effort and to represent market rate "plus"	7 Provide for exceptions to schedule being brought to attention at once
		8 Maintain time standards and rates to insure workers confidence	8 Record all standards for reference
			9 Provide for changes and improvements necessary for "higher efficiency"

A Chart to Aid Executives in Managing for Maximum Production.

help to every member of an organization and we present it herewith for the good suggestions that it gives.



About Bridges on Hollow Ware Dies

Heavy bridges on hollow ware dies are merely excuses for incorrect location, according to F. W. Knapp, an expert on dies. They act as a baffle to the clay, cause bridge cracks in the material, and consequently must be placed a considerable distance from the die-plate, which again adds to the horsepower required. The closer the bridges can be set to the die-plate the less horsepower required. This is governed by the tendency of the material to knit to-

gether again, after being split by the bridge, and by the means devised to enhance this knitting property.

When the bridges in a die are correctly located so that the different streams of clay passing around and between the bridges and studs are exactly balanced in volume and pressure, very thin, light bridges with knife edges will hold the cores in their proper places without shifting. The location cannot be determined by any formula yet devised, but is found by experimenting and the use of common sense. Lighter bridges may also be used when braced by additional light bridges, and the light reinforcement will not reduce the capacity of the machine as much as one heavy bridge, having the added advantage of nearness to the die and prevention of bridge cracks.

Bridge cracks can be overcome to a certain degree by grooving the bottom of the bridges in alternate places with a file, giving a knitting action to the flowing clay, or by winding a piece of curtain chain around the bridge at the location of the crack. Where large dies are used with heavy bridges, a saw-edged piece of steel may be pinned to the bottom of a bridge to tear the clay. Another method is to barb the bridges and metal back of a die with a chisel, but this is not advocated, as it adds friction to the die.

The ordinary method of adjusting a die is to place a piece of metal on the top of a bridge located so as to check the flow in the section traveling faster than the rest of the bar. These pieces or baffles vary in size from a small flat piece of iron one inch square to plates sometimes two inches wide and six inches long. While this method is perfectly satisfactory in an emergency, or where a special order is being run, it is very poor policy for every day practice. It reduces the capacity of a machine greatly, and many times will strain a die so as to wreck it, breaking, by unbalanced pressure, steel studs $\frac{7}{8}$ in. in diameter and twisting bridges out of shape and rendering them unfit for use. Baffles are also placed on the die plate, at the back, to stop fast flow on the sides. In this position they are quite often necessary for making special shapes with walls of unequal thickness.

When care and study are given to the proper location of bridges, their length, distance from die-plate, and the openings between bridge studs, baffling may be entirely done away with, as balanced pressure can be attained between all the streams of clay forced thru them to form the bar. By making use of a few evenings to experiment with an old die a perfectly true bar can be caused to issue from the average hollow ware die.



Saving Fuel in Burning Scove Kilns

In burning brick in a scove kiln it is not good practice to permit the kiln to cool off between fires so as to allow the heat to rise. It is better to allow sufficient air to penetrate to the arches over the bed of coals all during the fire, this air serving to prevent the melting of the lower brick in the arches and also acting as a carrier to lift the heat to the upper, unburned courses.

Up-draft burners will often close off one side of the kiln during the finish of the burn and "mud-up" the furnaces, firing only one side for from four to six hours, the object being to reach or burn the opposite head from the firing side. The operation is then reversed and this method lasts about twenty-four hours. It has one advantage in that it is economical in fuel.



A company has recently been organized in Kaiuan, Manchuria, with a capital of \$50,000, to manufacture brick.

IN *the* WAKE *of the* NEWS

Being a Brief Mention of a Host of Interesting Happenings in the Varied Fields of the Clayworking Industry

Personal

H. M. White, salesmanager of the Hocking Valley Products Co., of Columbus, Ohio, visited the plant located at Greendale, early in July.

B. Frank Cotter, aged 50, a brick manufacturer, of Coshoc-ton, Ohio, died at the Grant Hospital, Columbus, on June 18, after a short illness.

W. L. Cremers, sales manager for the R. B. Tyler Co., Louisville, Ky., recently left the city for a vacation of about two weeks or more, which he is spending in Connecticut.

Jeremiah Leonard, for three years superintendent of the Atlas Building Material Works, of Hudson, N. Y., has resigned to accept a similar position with the Rose Brick Co., of Roseton, N. Y.

Howard Frost, president of the Los Angeles (Calif.) Pressed Brick Co., recently visited in San Francisco, arriving there from his home in the South on a combined business and pleasure trip.

W. P. West, salesman with the Ironclay Brick Co., of Columbus, Ohio, left recently on a motor trip with his family to St. Louis. He will visit a number of brick plants on his route.

James T. Howington, manager of the Coral Ridge Clay Products Co., Louisville, Ky., is making a combined business and vacation trip to the North and East, expecting to be away about three weeks. The company's plant is operating at about half time.

James R. Valentine, head of M. D. Valentine & Brother Co., Woodbridge, N. J., manufacturer of fire brick and producer of fine clays, died suddenly while at Asbury Park, N. J., June 26. Mr. Valentine was well known and very prominent in the ceramic industry in this district.

Will P. Blair and S. M. Duty, vice-presidents of the National Paving Brick Manufacturers' Association, Cleveland, and C. C. Blair, member of the board of governors of the association, were representatives from Northern Ohio attending the Eastern Paving Brick Manufacturers' Association meeting July 7, at Fort Pitt Hotel, Pittsburgh, Pa.

James Howington, of the Coral Ridge Clay Products Co., Louisville, Ky., is one of the leaders in the "Buy a Home" movement, and was named a member of a committee appointed to organize Louisville and the state at the get-together meeting recently held at the Seelbach Hotel. The real estate interests are especially active in the campaign.

R. W. Shulthis, president of the Coffeyville (Kans.) Brick & Tile Co., and also president of the Western Paving Brick Manufacturers' Association recently visited Kansas City to attend the monthly meeting of the association. Mr. Shulthis reported that business has been very good and that the company was making great headway with its orders.

R. L. Queisser, head of the R. L. Queisser Co., Cleveland, Ohio, is touring the far West with Mrs. Queisser. He has been spending much time in California, and will end his tour at El Paso, returning thence to Cleveland. While away

Mr. Queisser has been giving close attention to building conditions on the coast, and is expected to have an interesting report upon his return home.

A. M. Maddock, Thomas Maddock's Sons Co., Trenton, N. J., has recently returned from a trip to South America, made in the interest of the company, to glean first-hand data relative to trade and economic conditions in the principal countries in this section. Mr. Maddock tendered an address dealing with his trip before the Trenton Traffic Club on June 25.

Hiram Swank, identified with one of the oldest brick firms in the western part of Pennsylvania, died at his home in Johnstown, Pa., on June 18, after an illness lasting four months, in his 85th year. Early in life Mr. Swank learned the pottery trade, and later went into the manufacture of fire clay products. The Hiram Swank's Sons have plants at Irvona and Clymer, Pa.

James H. Hill, president of the Alberhill Coal & Clay Co., of Los Angeles, Calif., was a visitor from the South. While in this vicinity, Mr. Hill visited the various plants around the bay and made a special trip to the Gladding, McBean plant at Lincoln. The products of the Alberhill company are widely used thruout the state and Mr. Hill took the opportunity to get a line on conditions in the markets of the firm.

Gus Larsen, superintendent of the Los Angeles (Calif.) Pressed Brick Co., recently returned to that city from a trip to Portland and the Northwest, where he was inspecting one of the brick plants in that vicinity which has been closed down for some time. It is understood that Mr. Larsen is contemplating arrangements for the reopening of the factory under the guidance of the Los Angeles firm. He visited several members of the trade in San Francisco, stopping off in this city on his way home.

Edward B. Fish, widely known as a brick manufacturer, died at his home at Otter River, Mass., on June 23. Mr. Fish, who was nearing his 49th birthday, had been in poor health for more than a year, altho able to be about most of the time. He was born in Worcester, Mass., but when a young man went to Rochester, N. H., where he first engaged in the brick manufacturing business under the name of the Spiers-Fish Brick Co, maintaining business offices in Boston. He remained in Rochester about seven years, and ten years ago moved to Otter River, Mass., where he bought out the brickyards of Charles Leathe, one of the largest plants in that section of New England. He continued the operation of the yard until last year, when war conditions made it necessary to suspend, but had again resumed manufacturing this spring with prospects of a good output. Mr. Fish was a veteran of the Spanish war and was twice under fire. He was married and his wife survives.

California

The Richmond (Calif.) Pressed Brick Works is now operating with full capacity and has orders ahead that will keep the force busy for some time.

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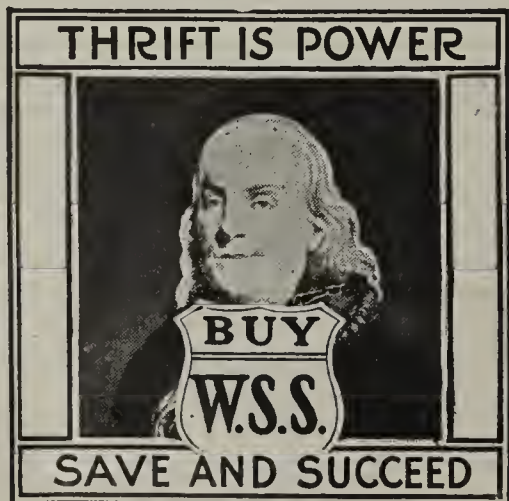
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Plans have been submitted to the owner for the erection of a two-story brick building to be erected at Martinez, Calif., at a cost of about \$25,000.

The United Materials Co., located in the Crossley Building, San Francisco, reports several good sized shipments of pressed face brick to Klamath Falls, Ore.

The Port Costa Brick Works, of San Francisco, Calif. has received several large orders recently and is now running full force to make prompt deliveries.

E. J. Kump, of Fresno, Calif., is preparing plans for a one-story brick school building to be erected in the Grangeville district of Kings County at a cost of \$40,000.

Negotiations are in progress, it is reported, for the purchase of the Cannon & Phillips tile and brick works at Ben Ali, by Gladding, McBean & Co., of Lincoln, Calif. Hollow tile will be manufactured at the North Sacramento factory, whereas heretofore the Gladding-McBean plant has not engaged in the manufacture of this commodity. Upon the completion of the deal, members of the present firm of the Cannon & Phillips Co. will attend to the sales end of the business and in all probability Charles Gladding will superintend the factory.

The condition of the clay products industry on the Pacific Coast has been improving steadily for the past month and at the present time practically all of the factories in the vicinity of San Francisco are working at full capacity. Scarcity of labor seems to be the main difficulty now and while orders are coming in fast, there are occasions where companies have had to bend every effort to make deliveries on time, due to the labor situation. Building activities have resulted in a new era for the clay products manufacturer and the class of buildings under course of construction or planned for early building are of the type wherein many products of the kiln are used.

Prospects are decidedly brighter for the clay products manufacturer in California at this date than they were a month or two ago, and a feeling of optimism regarding the future of the industry is spreading slowly but surely among the trade after a period of exceedingly trying conditions. Prices have reached a fairly steady level and it is the opinion of local dealers that there is no chance for a reduction in any lines for many months to come. In fact, there are those who believe that the present wage scale and price schedule has come to stay and are laying plans accordingly.

There has been considerable talk among clay products manufacturers of California concerning exporting to South America and the Orient, and while there is a good deal of individual shipments, the business has not reached any particular status as yet. The pioneers of the movement are, as a rule, extremely non-committal concerning their observation of the export trade, but all agree that the field is an unusually fruitful one and should be developed with the idea of maintaining permanent negotiations with foreign interests.

Connecticut

The plant of the American Brick Co., at Berlin, Conn., was destroyed by fire on the night of June 30 with a loss estimated at \$50,000. At about the same hour several buildings in the immediate vicinity of the brick yard, owned by the City of Berlin, were burned and the police believe both to have been incendiary.

Delaware

A little "building boom" in the matter of home construction has struck Elmhurst, near Wilmington, Del., and plans are under way for the erection of a number of structures of this type to cost about \$200,000 in the aggregate. The Elmhurst Co. is active in this work. Brick is a popular material in this section and a good demand is ensuing from this quarter at the present time. Prices are in the neighborhood of \$20 and above, for delivery on the job.

James R. Oberley, Wilmington, Del., is operating his plant on Orange Street for the production of high grade common brick. Three trucks are in service at the present time, with a number of teams for short hauls, as well as small orders. The current quotation for brick is \$20 per thousand, delivered in the city. The yard has a total capacity for the production of about 5,000,000 brick, and it is the intention to manufacture this number during the present season.

Building construction is advancing in fairly good fashion at Wilmington, Del., and vicinity, but the great need for housing accommodations is not being given quite the attention that is seemingly due. At least, this is true if the building department records mean anything, for during the month of June permits for only about 60 dwellings were issued, with aggregate valuation placed at \$258,866, while plans for four apartment houses to cost \$24,050 were filed in this same period. Automobile garages are evidently the popular thing in this section, for no less than 277 structures of this nature were arranged for in June, with total cost running to \$201,000. There is little industrial construction going on at the present time, altho the aspect in this direction is rather encouraging. Two interesting recent projects cover the erection of a new grade and high school at Seventeenth Street and Tower Hill, to cost about \$250,000; the James Steward Co., 30 Church Street, New York, has the contract for erection. The second item embraces a church improvement and parish house at Concord Avenue and Market Street, for the St. John M. E. Church, to cost about \$40,000.

Kansas

The Union Brick Co., Iola, Kans., has recently moved its general and sales offices to 820 Commerce Building, Kansas City, Mo. The concern expects to build three round kilns for face brick as soon as the summer rush is over, and is planning an advertising campaign to increase its market.

The Pittsburg (Kans.) Chamber of Commerce is seeking to interest local capital in a new brick manufacturing company, to be known as the Metropolis Paving Brick Co. M. M. Bushong is president and general manager of the concern. Other promoters of the company are out-of-town capitalists.

Kentucky

Business with the Southern Brick & Tile Co., Louisville, Ky., has been quiet for the past few weeks, but the company has some very fair prospects, and has been making up some drain tile for its winter trade during the dull period in brick demand.

Indications are that the proposed \$2,000,000 sewer bond issue will go thru with ease, and that Louisville, Ky., will be a good sewer pipe market next year. Local and out of town brick and pipe concerns are reported to be very much interested in this big issue.

Common brick in Louisville, Ky., is selling at \$14 per thousand at plant, and \$16 delivered, with common face quoted at \$20 delivered, and \$18 at the plant. Indications are that prices will go higher as fall advances, due to pros-



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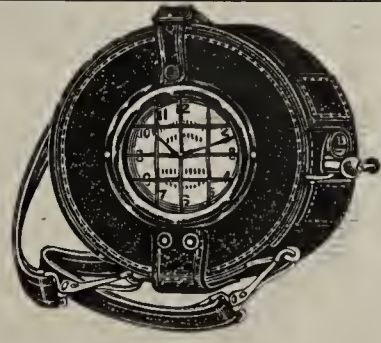
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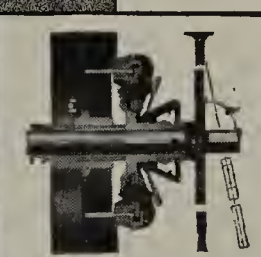
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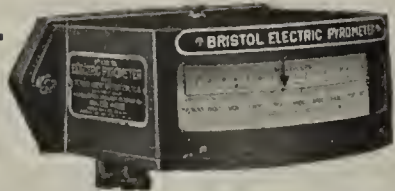
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(Patented)



BRISTOL'S PYROMETERS

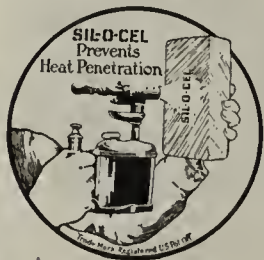
For Indicating and Recording are particularly adapted to high sustained temperatures, where the value of entire burns are dependent on correct readings.

They measure up to the high standard maintained by Bristol's Instruments for over a quarter of a century.

Write for bulletin AE-205

THE BRISTOL CO., Waterbury, Conn.

Heat Losses Must Be Reduced



The ceramic industry faces a permanent increase in fuel costs. Insulation of kilns with Sil-O-Cel is the most effective step in reducing this waste. The most efficient kilns in the country are insulated with

SIL-O-CEL

Write for blue prints and Bulletin R-71.

CELITE PRODUCTS COMPANY

NEW YORK CHICAGO PITTSBURGH LOS ANGELES SAN FRANCISCO
11 Broadway Monadnock Bldg. Oliver Bldg. Van Nuys Bldg. Monadnock Bldg.

They Drill Big Blast Holes

at the plant of the Kansas Buff Brick & Manufacturing Co., Buffville, Kansas.

They say:

"It has cut the labor and fuel bill about 60%, and the powder bill about 50%. It paid for itself in the first three months; it saves enough powder each year to more than pay for its initial cost."

This is interesting because it is a fact.

Write for literature on Big Blast Hole Drilling

The Sanderson Cyclone Drill Co.
Orrville, Ohio

BRODERICK & BASCOM ROPE CO.
SAINT LOUIS, MO.

Manufacturers of

B. & B. WIRE ROPE

AND

Aerial Tramways
For Economical Haulage



A28

pects for higher coal and labor. Prices at present are several dollars lower than they were at the close of the war.

Jobbers as a whole in Louisville, Ky., have been having a nice run of business but a considerable amount of residence work calls for such small quantities that the jobber who does not carry stocks on hand is unable to handle the less-than-car-lot business. However, local jobbers are carrying good yard stocks and are in position to meet the local competition.

Outlying plants, especially those operating community towns in Kentucky, have been having trouble in getting and holding labor, as city jobs have been plentiful and it is a hard matter to get labor to stick in the country, especially with farmers in need of harvest hands, and offering high wages. One large country plant has had trouble in maintaining a half crew.

A telephone strike in Louisville during the week starting July 1, held back general operations somewhat, but both telephone companies are now operating their main exchange lines, with prospects of full service over suburban and long distance lines within a few days. Louisville has had several strikes lately, including a strike of bakers, printers, and clothing workers, all of whom are still out.

Business with the Louisville brick manufacturers and jobbers has been slowly picking up, but is still a long way from being what it should be. There is a very fair volume of small work underway, and contractors and builders are busy, with building labor fairly well employed. However, big contracts, especially office building contracts, are holding fire. Some of these contracts which had been expected to get under headway during the past month are still hanging, with no immediate prospects of early consummation.

The P. Bannon Pipe Co., Louisville, Ky., while not rushed with business, is managing to keep both of its plants going steadily, and is well satisfied with the outlook. The company recently secured contracts for the fireproofing material to be used in the University of Tennessee, at Knoxville, which will cost about \$800,000. The brick contract on this job went to the Key Brick Co., Knoxville. The company also has an excellent contract at Nashville for furnishing sewer pipe in connection with the million dollar sewer bond work.

The Progress Press Brick Co., Louisville, Ky., reports that things have been a little quiet for two weeks as several big contracts are holding fire, but that it will have kiln room by the middle of the month, and will start on another lot of a half million brick, after being down for a short period. Andrew Hillenbrand, Jr., in discussing conditions said: "We feel very optimistic out here, and while we are not rushed we are managing to keep fairly busy. Labor has been scarce, but we are favorably located and have been able to get all the men we needed."

On a considerable amount of modern building now underway in Louisville, Ky., the brick man as well as the lumberman is getting a fair percentage of the business, as the brick veneer type of construction for residence and small apartment house is growing rapidly. Several of the large home builders and small flat house building concerns are building little other than brick veneer buildings this year. Stucco appears to have gone backward, and frame is meeting with demand only in the very small buildings. Fire rates have largely helped the brick man in connection with frame construction, while stucco hasn't proved very durable. The half brick, half shingle type of construction has also gone backward.

Louisiana

Plans for enlarging its plant, already under way, by the Shreveport (La.) Brick & Tile Co., will make the establishment one of the largest brick and tile manufacturing plants in the state. The sum of \$45,000 is being spent in new machinery and buildings and a tract of 110 acres adjoining the existing factory was acquired, from which the company will take its clay. Part of this tract will be used to solve the housing problem, by erecting homes for the company's employees. Formerly the company manufactured only common brick, but with the new machinery which is being installed, it will be fitted for the manufacture of hollow building tile, silo blocks, drain tile and roofing tile.

Maryland

The Baltimore (Md.) Brick Co. is specializing in the production of a Colonial face brick of different shades at its local plant, Baltimore, producing harmonious and pleasing color effect when placed together on the job. This brick is selling for \$25 per thousand. Common brick at the yard at the present time is quoted at \$16 per thousand. The company operates a total of eight plants in different sections in normal times. Production is now being maintained slightly in excess of 50 per cent. plant capacity.

A substantial building boom is well under way in the Brooklyn and Curtis Bay sections, near Baltimore, Md. This is an industrial center of extensive proportions, and very active thruout the war period. The Union Shipbuilding Co., Fairfield, is enlarging its plant by the construction of a number of new shipways and buildings. These latter include a brick warehouse and works buildings. The extension is estimated to cost about \$2,000,000. This company is operated by the McClintic-Marshall Co., Pittsburgh, Pa. The United States Industrial Chemical Co. is making a number of extensions and improvements at its Stone House Cove plant, including experimental and operating buildings.

There is no change in building material prices in the Baltimore district, nor any evidence of important variation at the present time. Common brick continues to be quoted at \$14 a thousand, which is a low figure as compared with cities not so far distant to the north. Better grades of material are to be secured at \$18 and \$20 per thousand. Face brick is quoted at prices from \$10 for low grade upwards. Standard red sand brick is selling for \$23 a thousand, Bradford reds at \$35, and Standard Iron Spots, \$36 a thousand; rough texture and tapestry selections are bringing \$36, while light colored stocks are selling for \$40 a thousand, such quotations being for delivery on the job in carload lots. Fire brick is in fairly active call, with price ranging around \$70 per thousand.

The popularity of brick not only for building construction, but for auxiliary service is constantly evidenced, and at the present time the St. Mary's Industrial School, Baltimore, Md., is making a rather novel use of the material. The institution has inaugurated a campaign for a building fund of \$500,000 to allow for the rebuilding of the structures destroyed by fire recently. Brick are being used to good advantage in the campaign, being placed on sale at \$1.00 each at different places thruout the city. This "buy-a-brick" idea has caught on in good fashion, and altho only placed in operation within the past week or so, a noticeable increase in the fund thru this source of revenue has resulted. At the present time the contributions have reached a total of over \$300,000, practically insuring the rebuilding of the institution.

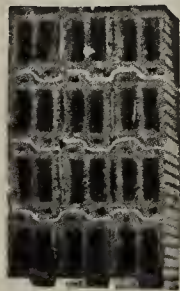
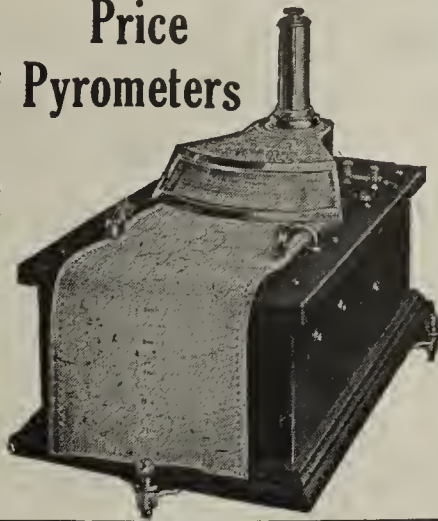
Many plants have improved their ware, saved time and saved lots of fuel with a Price Pyrometer.

Any one of these savings justify a Price Pyrometer on your kilns.

We want to tell you more about them. Write us today.

The Price Electric Co.
12367 Euclid Ave.
CLEVELAND OHIO

Price Pyrometers



"LOXALL" Popular Hollow Tile

is being licensed to manufacturers in the U. S. A. and Canada. It has earned the title of "Popular Tile" because it is easy to make, lay and sell, and is liked by the Builder, the Mason and the Manufacturer.

If you are interested in this money making proposition, get in touch with us at once.

J. E. EXNER 507 Spruce Street, E.
Coffeyville, Kan.

THE TANK WITH
A REPUTATION

Caldwell

Simple, Strong, Safe

There's the story of a Caldwell Tubular Tower. It is so simple that you can erect it yourself. It is so strong that it will endure cyclones and tornadoes. It conforms strictly with approved engineering principles. The cost is moderate.

If you want these qualities in a tower, equip yourself with a Caldwell Tubular.

Send for Catalogue

W. E. CALDWELL CO.
Incorporated

2380 Brook St. Louisville, Ky.



They Do Produce Results

We refer to

Those little ads you have noticed in our Classified Ad Pages.

It is the decision of concerns who have used them. Try one.

Brick and Clay Record

We Can Save You Time, Money and Trouble on Fire Brick

BECAUSE OF

Quality, Price and Service

Freight Rates on all R.R.'s in UNITED STATES and CANADA

A Trial Shipment Will Convince You. Write Us

ALSEY BRICK & TILE COMPANY
ALSEY, ILL.

This speaks for itself—

Great Falls, Mont., March 20, 1919.

We take pleasure in recommending Mr. Mason to anyone in need of a first class kiln man and expert burner.

Mr. Mason had charge of our burning last year and is with us at the present time as a kiln man. We have never seen his equal as a burner and in this line do not think that he can be excelled.

We have found him absolutely reliable and conscientious, and a gentleman whom it is a pleasure to do business with. To any concern not getting best results from their kilns, we take pleasure in commending Mr. Mason to you as a man who can pull you through if it is possible for it to be done.

GREAT FALLS BRICK & TILE CO., (Signed)
Wm. H. Shaw, General Manager.

HARRY V. MASON
Pyrometric-Expert and Kiln Specialists
Clays Tested Trial Burns
1153 49th Avenue, PORTLAND, ORE



"Good as Ever" after 2½ years' service

On September 7, 1916, we shipped some of our No. 18 Union Steel Chain Belting, which operates on standard No. 88 sprockets, to the Haviland Clay Works, Haviland, Ohio. On March 5, 1919, we shipped them new pins for this chain, and have just received their letter, stating:

"We received the pins and cotters, and after re-pinning the chain, in use so many months, it gives as good service as ever. Your chain fills our needs exactly."

Write us for details which show how these Trouble Proof chains can fill your needs exactly.

THE UNION CHAIN & MFG. CO. Seville, Ohio



B-G PORTABLE CONVEYORS

helped the Superior Sand Co., of New Lexington, Ohio, to cut their handling costs from 10c to 1½c per ton of sand. B-G Conveyors perform equally as well for many others. Watch for our full page advertisements in the FIRST ISSUE of each month.

BARBER-GREENE CO., 515 W. Park Ave., Aurora, Ill.

Branch Sales Offices in Principal Cities



Two important actions have been taken to relieve the housing situation at Baltimore and allow the fulfillment of plans for the construction of new homes by the city as now perfected. These include the application of Mayor Bryant to the Board of Estimates to finance the extension of the sewage and water systems into the territories to be developed, and the annulment of a recent resolution of the Water Board until January 1, 1920, covering the control of water service pipes across sidewalks and up to the building line. This will allow the builders to execute the work in accordance with their own plans and greatly facilitate operations. It is planned to build a large number of homes in different parts of the city, including 50 houses in the Curtis Bay and Brooklyn districts, and 300 homes in an adjacent section.

There is little cause for complaint in regard to present building work and proposed building work at Baltimore and surrounding districts. Things in different sections are on in earnest, particularly in the matter of housing work and industrial operations. This means a call for standard building materials of all kinds and this call is not far wanting at this time; brick of all kinds, and other burned clay products are in good demand. Plans are under way for the construction of 1,000 brick residences at Curtis Bay, each two-story, about 16x40 feet, and bids for the erection will soon be asked; Oliver B. White, Munsey Building, is architect for the project. A three-story brick apartment house to cost about \$110,000 will be constructed at Somerset and Roland Avenues by T. E. Biddison, 3312 Elgin Avenue. Construction is under way on a new three-story school and dormitory at Mount Washington, near Baltimore, to cost \$50,000, to be used as a school for boys by the St. Agnes College.

Massachusetts

Settlement the first of July of a strike in the building trades which had interrupted operations for nearly six weeks, is expected to bring renewed activity among dealers in brick. Manufacturers admit a gradual improvement in the market each month, but feel that conditions should be much better once the men all get back to work. The price remains firm in Massachusetts, at \$18 per thousand delivered on the job.

The brickyard of Frank M. Favor, on West Broadway, Gardner, Mass., which had been closed during the war because of the building restrictions and trade conditions generally, has been reopened and will soon be in full operation. Mr. Favor has had extensive repairs made to the buildings at the plant and expects to have a record output. The average output of the yard before the war was 1,500,000 brick per year and Mr. Favor expects to fully equal this during the present season. At present he has on hand about half a million brick, but with the rapidly increasing demand expects to dispose of these shortly.

The city of Chicopee, Mass., is considering the more general using of vitrified brick for street paving purposes in place of granite block paving now in common use there. Mayor Daniel J. Coakley and members of the Chicopee Board of Aldermen made a trip to Meriden, Conn., recently to get the views of residents of that city where vitrified brick is extensively used, and found, they reported, rather a divergency of opinion. City officials of Meriden and also of Wallingford, Conn., which was later visited, were said to strongly favor the brick. As far as Meriden was concerned it was declared that granite blocks were obsolete. Automobile owners and teamsters, however, were said not to be so strong for the brick. Altho no definite decision has been reached it is believed that the Chicopee officials will give brick a good trial on some of the principal streets.

Missouri

The Universal Brick & Tile Co. has closed its office at 425 Scarritt Building. The company is located at 559 Westport Avenue, Kansas City, Mo., and is conducting all its business at that location.

The Nicholson Construction Co. is working full time on its new brick and tile plant at Harrisonville, Mo. The plant will be known as the Harrisonville Brick & Tile Co., with general and sales offices at 820 Commerce Building, Kansas City, Mo.

Missouri cities within the past fortnight set aside appropriations for the installation of water mains. They are: Mayville, \$50,000 bond issue, and Boonville, \$35,000 appropriation. The latter appropriation will be used entirely for water mains.

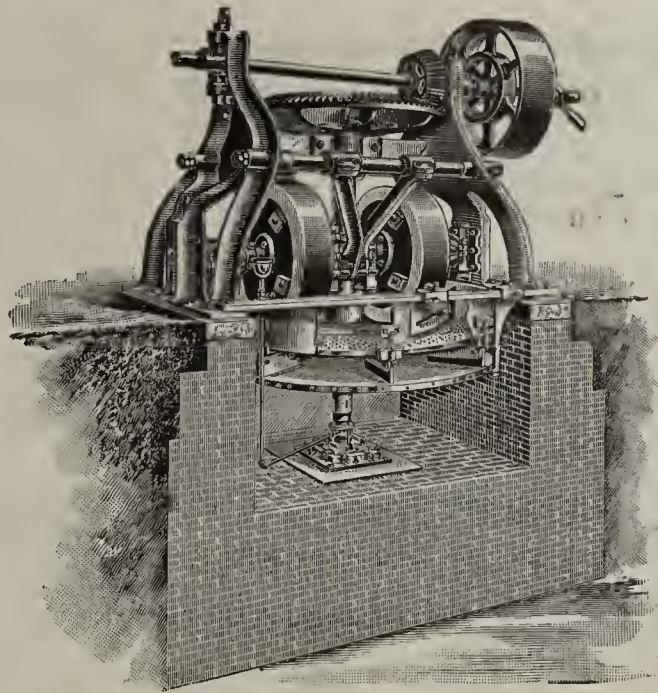
The biggest real estate deal in many months was consummated in Fulton, Mo., during the past fortnight, when the A. P. Green Fire Brick Co. purchased an entire city block in Hopkinsville, a suburb of Fulton on which to prospect for fire clay. The Green company has numerous holdings in Audrain County. The main offices of the company are located at Mexico, Mo. The company already has established a camp of prospectors on the ground.

The plans and specifications for a large swimming pool at Chillicothe, Mo., are completed and construction will begin as soon as all arrangements for financing the project are made. The chief construction material will be vitrified tile. It is understood that several estimates have been made on the work, but that as yet no bids have been asked. The pool will be 150 by 300 feet and will have a capacity of 200,000,000 gallons of water. H. H. Warner, of Chillicothe, is in charge of the arrangements.

The plant of the Hydraulic-Press Brick Co. at Diamond Station, near Kansas City, Mo. has been working close to capacity since its opening in April. The Diamond Station plant was closed for sixteen months. The Hydraulic company is now furnishing face brick for the Klien apartments, over seventy thousand brick being used on that job. The apartments being erected by the Clark Estate also require more than seventy thousand of the "Hy-tex" brick and the Kansas City Club more than one hundred thousand, cream colored face brick, while the City Water Department is using more than fifty thousand face brick in a new building at Forty-fifth and Mills Streets.

Brick manufacturers and brick sales offices at Kansas City, Mo., are extremely busy at the present time. Building has increased wonderfully during the past six weeks, which has brought a lot of well deserved credit to the "Build Now" campaign. There are several large structures in this city now under construction and many more that have not yet let contracts. Every one of the buildings in Kansas City has specified brick as the chief building material and there is not a structure in the city under process of erection save residences that is not being built of brick. H. F. Williams, manager of the Kansas City office of the Hydraulic-Press Brick Co., declares that this is one of the best seasons that has been had in Kansas City for some time.

H. Lyle, of the Lyle Brick Co., Kansas City, Mo., reports that business has been exceedingly good of late. The company has had several extremely large orders during the past few months and the two plants have been working close to capacity. The company manufactures only common brick. It recently furnished 500,000 brick for the new family hotel at 54th and Oak Street, 150,000 for the Nafziger Bakery and 300,000 for an apartment at 48th and



Dry Grinding Machine

Machines for

Crushing, Grinding, Pulverizing, Empounding, Tempering and Mixing, Elevating and Conveying All Kinds of Materials.

STEAM PRESSES FOR MAKING

Sewer Pipe, Drain Tile, Hollow Blocks, etc.

All of the highest class designing and construction are manufactured by

THE STEVENSON COMPANY

General Offices and Works: WELLSVILLE, O.

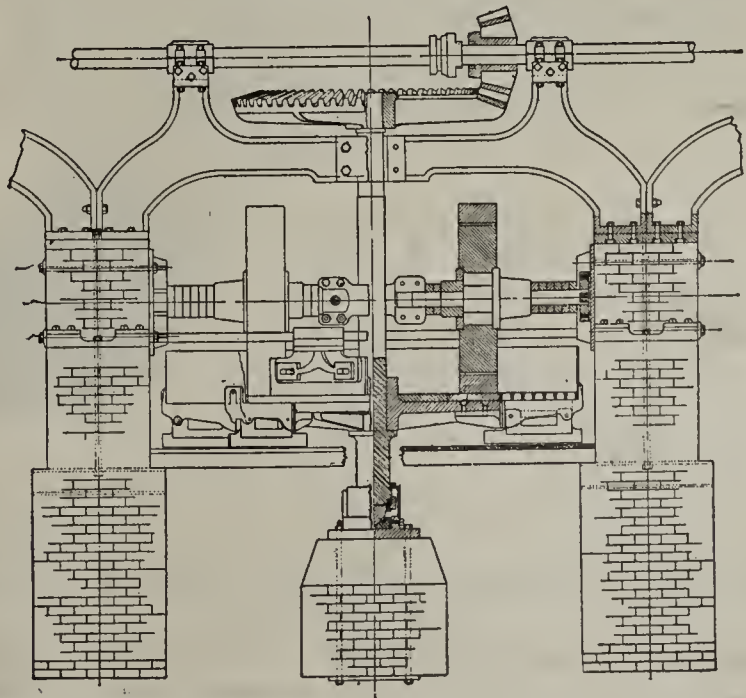
Engineering and Western Sales Office, Monadnock Building
CHICAGO, ILLINOIS

The "MEANS" 9 Ft. Dry Pan

is being chosen for the reduction of clay and shale by successful claymen because careful comparison with other makes, and records of their performance, show the "Means" to be the best. Special features are the improved step and toe, and adjustable bearings.

In addition to dry pans we manufacture all equipment required in sewer pipe and tile plants, and our special goose-neck attachment for the sewer-pipe press affords a means of making brick directly from the press. Write us.

The Toronto Foundry & Machine Co., Inc. Toronto, Ohio



40,000% PROFIT

Enormous Profits in Stopping Belt Slip



Ever hear of anybody making 40,000 per cent profit on Wall Street? We haven't.

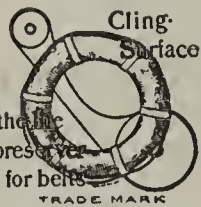
Well, this is the way you can do it: One man kept his belt in a slipless condition with Cling-Surface for over 8 years at an average cost of 27 cents per year. Based on the formula published in our ad in the "Brick and Clay Record" last month, the annual saving was \$108.

$108 \div 0.27 = 400 = 40,000$ per cent profit. Every user of Cling-Surface is making similar profits. It is impossible to do otherwise.

In order to save \$108 anywhere else the average business man would perhaps spend \$90 or \$100. Why should belt users, then, hesitate to spend 27 cents to save \$108?

But the "beauty of it" is—that isn't all. The profits are even greater. When a belt stops slipping it lasts longer. Belt wear is due entirely to friction—internal or external. So, although these additional profits depend entirely upon conditions, doesn't it seem possible that the final profit may be 50,000 per cent or even more?

Cling-Surface keeps belts in NATURAL condition. It makes and keeps them pliable and "grippy" without making them the least bit sticky. It PENETRATES the belt, surrounds, lubricates, and thus protects every tiny fibre. Cling-Surface is the logical, proper treatment that every belt man should apply to stop slip, save belts, save power, increase output, and save much money.



Write TODAY for a 50-lb. can. Use one month. If results aren't satisfactory return the remainder at our entire expense.

CLING-SURFACE COMPANY
1029 NIAGARA STREET
BUFFALO, N. Y.

2



YOU COULDN'T ASK FOR BETTER PROOF

Put a Waterbury Armored Rope into service alongside ordinary bare wire rope, and about the second time the bare rope has to be replaced—while the original armored rope is still doing duty—you'll realize the difference that protecting flat wire armor makes. The harder the service, the quicker the economy in Waterbury Armored Rope shows.

Waterbury Armored Rope (Gore Patent) is a wire rope with each strand served with flat wire, which protects the strands of the rope from abrasion and aids in retaining the internal lubrication. (The details of this construction and of other kinds of ropes, you'll find in the Waterbury Rope Hand Book*. It tells all there is to know about rope—illustrations, diagrams, tables, statistics and all that.)

Waterbury Company, 63 Park Row, New York

*The Waterbury Rope Handbook is a 220-page cloth bound book of convenient size

for ready reference. It contains comprehensive data on rope that will be found most valuable by every user, buyer or shipper of rope. A copy will be sent free upon request. 2326-W.

Main Streets. Mr. Lyle said, "During the period that the brick plants were practically closed many of the men employed in the business found employment in other lines and now that the brick plants are again working it is exceedingly hard to secure competent labor and almost an impossibility to secure experienced laborers.

Manufacturers of clay products, contractors, and promoters are expressing alarm over the drastic results of the recently enacted St. Louis zone ordinances and are discussing means of combating them. Director of Public Safety McKelvey, who also is building commissioner, announced July 3 that in June applications for approximately \$2,000,000 in building permits were refused by the building commissioner's office, due to the inability of builders and investors to meet the requirements set out in the zone ordinances. Manufacturers are disgusted with the law and lament the fact that they are losing thousands of dollars' worth of business in St. Louis because of it. Director McKelvey declared that the provisions of the zoning ordinances are so drastic that building in St. Louis has been seriously handicapped.

Plants in and about Kansas City, Mo., have been working as close to their capacity as has been possible. All companies report that they have made every effort to work to capacity, but that the labor situation has made this practically impossible. Plants have orders on hand to keep them busy for several months and from the present outlook it seems that a number will be falling behind schedule unless the labor situation adjusts itself to such an extent that the output can be increased in proportion to the amount of business on hand. Prices are normal and practically at a standstill here, or rather at a standard. There has been less price cutting this season than perhaps ever before in this city and territory. Good business is more or less responsible for this condition, there being a ready market for the brick almost as rapidly as it is possible to manufacture. There is no tendency to cut prices in an effort to make sales or turn the products.

Within a few weeks the first steel barge of the new St. Louis to New Orleans fleet will arrive in St. Louis. The finishing touches are being put on the craft at the American Bridge Co., Pittsburgh, Pa. The new \$7,000,000 fleet of forty barges will be in service before next summer. The second barge is due to be launched almost any day and the remainder will be turned out at the rate of three a month. They will increase the present capacity of the barge line one-third. The barge line is of much interest to clay products manufacturers, particularly makers of brick, several of whom have purchased levee property in anticipation of its growth. Short hauls are made by these barges to brick and other clay products manufacturers who get material from along the river. Several manufacturers have their own barges in operation for short hauls, and aside from this many have made use of the present government line for southern shipments. Irregular schedules, due to incomplete equipment, was responsible for inconsistent use of the barge line by manufacturers, but it is expected that they will give the line much business after the new fleet and several powerful towboats are in service.

An opportunity that has been awaited with much interest by St. Louis brick manufacturers was announced with the return of F. W. A. Vesper, president of the Vesper-Buick Co., from the annual meeting of the distributors of the Buick Co., at Flint, Mich. Mr Vesper said July 3 that details for the main buildings of the Buick and Chevrolet plants at Natural Bridge Road and Union Boulevard have been completed by the General Motors Co., of Detroit. W. H.

Kilpatrick, works engineer of the Buick Co., will arrive in St. Louis in a few days to take charge of the work. Mr. Vesper announced that plans and specifications for contractors can be obtained from him or from Mr. Kilpatrick. A set of specifications will be filed with Edgar Gengenback, Industrial Commissioner of the St. Louis Chamber of Commerce, for the use of any contractor who wishes to see them. It is expected that the main buildings will be under construction in August or early in September. The buildings, docks and trackage will cover about twelve acres. All of the buildings will be three stories high and will be so constructed that additional units may be erected. The property of the company covers 105 acres and will represent an investment of \$7,000,000.

Montana

The Kermode & Davis brickyard, Livingston, Mont., has resumed operations, turning out a fine grade of brick.

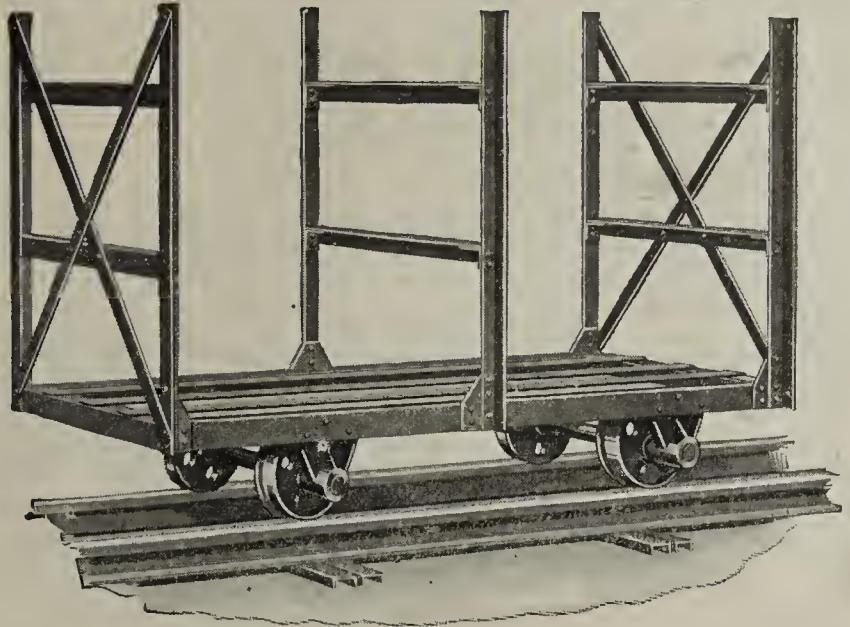
New Jersey

The General Ceramics Co. is very busy at the present time at its Keasbey works, devoted to the production of chemical stoneware. The company has developed plans to take contracts covering the complete stoneware equipment of chemical plants, and this phase of activity is broadening out in excellent fashion. The local plant has produced some remarkable specimens of chemical stoneware, illustrated in different numbers of *Brick and Clay Record* in the past, and is equipped to handle all classes of work in this line.

That more and more attention is being given to burned clay building products by the Government, with growing appreciation for the value of such commodities in the construction of cantonments and permanent Federal works, is shown by the extensive use of hollow tile in a number of buildings now being erected at different Government sites in New Jersey. At Lake Denmark a new naval powder depot is now being established, to comprise a number of hollow tile structures, the two largest ones, forming ammunition storage magazines, being 50x150 ft.

There is little cause for complaint among the clay and ceramic interests in the Raritan River section at the present time. The past two months has brought about a decided change—where labor then was plentiful, it is now scarce; where there was no building, things have commenced to move in this direction, and where brick, tile, clay miners and other ceramic works were running at reduced capacities, near-normal outputs are now being maintained. The big handicap to production at the present time is labor; good labor is extremely difficult to obtain, and such men as are available have only in mind to work long enough to secure funds to return to their native lands. Now that the war is over, there is an evident desire on the part of many foreigners to leave this country for home points in the former war zone. Quite naturally, ceramic and other industries do not care to employ labor that seems destined to "stick" only a short time.

Atlantic City is commencing to feel the effects of the active building movement. Realty interests report considerable improvement in transactions, and new construction work is coming along in good fashion. As might be expected, the plans for new hotels at this popular resort include a number of important structures, and the most prominent among these is the new hostelry of the Ritz-Carlton Co., to be located on the site of the old Windsor Hotel, adjoining the Traymore. The structure will be known as the Ritz-Carlton;



Individual Service on Dryer Cars

Let us know your requirements
—let one of our engineers
come and help you to plan the
style of car that will best suit
your needs. We know how.

H. D. Conkey & Company
Mendota, Ill.

You can get a higher price for your brick
if you guarantee it will be

Scum-Proof

And you can do this with perfect safety by
using

R. H. Precipitated Carbonate of Barytes

It neutralizes the salt in your clay so that
it cannot appear on the surface of the brick
after it gets wet.

But don't accept a substitute—insist on R. H.
—the dependable brand.

Write for circular and prices.

The Roessler & Hasslacher Chemical Company

100 William St.

New York

Chicago, Ill.
Cincinnati, O.
Cleveland, O.

St. Louis, Mo.
Kansas City, Mo.
San Francisco, Cal.

Philadelphia, Pa.
Boston, Mass.
New Orleans, La.

We carry a complete line of high grade chemicals
for the clay industry



Light steel rails

We saved the day for the Clay and Coal Operators in War Times by furnishing BUCKEYE MINE RAILS, whenever and wherever needed, and while many other Steel Mills were running exclusively on other material, you could not have operated without us at that time.

Now, in Times of Peace, we ask that you do not forget us, as we can, and will render the same unexcelled service, and furnish the same high quality of material. "Buckeye means best", and BUCKEYE LIGHT STEEL RAILS are better still. All sections from 12 lb. to 40 lb. inclusive always in stock for quick shipment.

Let us have your inquiries, and we will take the chance of developing them into orders on our books.

THE BUCKEYE ROLLING MILL COMPANY
STEUBENVILLE, OHIO

DOES YOUR PROFIT GO UP IN SMOKE?

Canton Rocking and Dumping Grates in your plant mean a large saving in fuel, or a greatly increased production with the same amount of fuel. By improving combustion, they make a coal saving of at least 10% in comparison with stationary grates. Peak loads can be maintained easily.

If you are interested in cutting down fuel cost and improving combustion, write for Bulletin B. Form 14.

Canton Grate Co.,
1706 Woodland Ave., N. W.
CANTON OHIO

**CANTON GRATES SAVE FUEL
FOR BOILERS FOR KILNS**

it will contain 800 sleeping rooms, with baths, and is estimated to cost about \$3,750,000 exclusive of ground. The building contract has been awarded to Cramp & Co., Denckla Building, Philadelphia. Another new hotel was recently completed and formally opened to the public on June 16. This hostelry is known as the Ambassador, and represents an investment of about \$3,000,000. It is located in the Chelsea district and will be operated by the California Hotel Co.

The Hackensack brick yards are maintaining production at a good pace. There is no let-up or intention of let-up; every day of the season is being made to count and every working period is seeing thousands of brick molded and turned out. The current prevailing price at the local yards is \$16 per thousand for good hard common stock. The Hackensack Brick Co., operating one of the largest yards in this section, is now producing on an average of 70,000 brick per day, with a plant capacity of about 10,000,000 common brick during a season. The company reports a good demand for the material from the Paterson and Passaic districts, and daily deliveries in this section aggregate from 10,000 to 12,000 brick. This haul is made by means of motor trucks, making the company independent of the freight situation. There is a shortage of labor in this district, it is said, at the present time, and as in other parts of the country, the prevailing wage scales are high. The company is decidedly optimistic as to the general outlook and looks for a fall season of good business.

Building construction is picking up in a fine way in the Trenton section; not only are there a large number of brick homes and apartments now in course of erection, but industrial work is coming to the forefront at a good pace. In this latter connection, the William Freihofer Baking Co., Philadelphia, Pa., has acquired property on Pennington Avenue for the erection of a new plant to cost about \$300,000; the John E. Thropp's Sons Co., has arranged for the erection of a new brick addition to its mechanical works to cost about \$115,000, to be equipped as a machine shop; and the Luzerne Rubber Co. will build a two-story brick addition to its plant on Muirhead Avenue. The Rider-Moore & Stewart Business College is planning for the construction of a new school building to cost about \$250,000. Bids have been taken for the razing of the present structures on the site of the proposed new Stacy-Trent Hotel, and it is planned to inaugurate operations on this phase of the work at an early date. Plans for the new hotel, which will cost close to \$500,000 have been completed. Pottery interests thruout the city have been very active in the support of the new hostelry.

With the turn of the first half of the present year, it is possible to take a little account of affairs in building circles. For this period, ending with the close of June, construction work at Newark, N. J., shows an estimated valuation of about \$5,000,000; this is but little short of the entire year of 1918, which aggregated \$5,336,033. Each week gives evidence of increased operations, and there have been big jumps in permit valuations during the past fortnight in this city. June rounded out with a week totaling \$284,280, as against \$71,669 for the corresponding week of 1918; the permits numbered 77, as compared with 31 of the previous year. Permanent structures represent the bulk of the total operations, the new buildings of brick and other fire-proof materials aggregating \$176,085, or over half of the total valuation. Some of the important projects in the city at the present time cover a new two-story brick addition, with boiler house, at the works of the Seton Leather Co.,

to cost \$40,000; an addition to the plant of the Patton Paint Co. to cost \$65,000; a brick addition to the plant of the Natural Carbonic Gas Co., costing \$20,000; and a twenty-family apartment on William Street, East Orange, brick and limestone, to cost \$100,000; this latter structure will be built by the Williams Realty Co.

The demand for common brick, face brick, hollow tile and other burned clay products shows no signs of let-up at important centers in New Jersey. The call, on the contrary, is increasing from day to day, and the manufacturing plants are feeling the effect of the movement. Prices are evidently where they are to stay for some time to come, for there are no signs, whatever, of any decline, or at least not in the matter of basic and standard products. Hackensack, Trenton and brick manufactured in neighboring districts to these centers is now available in good sized quantities in the respective localities which draw on these sources of supply. At Newark, Jersey City and vicinity, Washburn brick is seen and such material from the plant of Rose Brothers, Kingston, N. Y., is also in the local markets. There is no change in common brick prices; at Newark the quotation is \$19.50 per thousand, delivered on the job; in New Brunswick, around \$19, and a like figure at Plainfield and vicinity. Atlantic City still leads as regards price levels with quotations at \$22 per thousand; at Trenton, the price is \$15 per thousand for first grade material. In the Paterson and Passaic districts, \$17 is being quoted. Face brick prices range from \$30 to \$50 per thousand, with a good grade of brick obtainable at from \$40 to \$42. Fire brick is selling around \$60, \$65 and \$70 per thousand.

Steady strides are being made in construction work thru-out New Jersey. Practically every city and district of importance reports an advance in this direction, and in the larger manufacturing centers industrial work is coming rapidly to the front. A number of important projects in this latter connection are now being developed, with estimated costs running into large figures. Housing work, including dwellings and apartments, are not far behind, while public work is gaining rapidly in the aggregate totals. Newark, Paterson, Passaic, Jersey City and other Northern New Jersey points, Trenton, New Brunswick, Perth Amboy, Camden, Atlantic City and so on south, are all holding their own in the matter of new construction activities of all kinds. Investment interests and builders now seem determined to make up for lost time, and when once ground is broken for a proposed structure every effort is being made to rush to completion. With brick of all varieties, burned clay products and other standard building materials in good demand, local stocks in these different sections are being drawn upon and then replenished; this means good times for the manufacturer and dealer, and this is the condition which now confronts these interests, with every indication of noticeable increases as the months go by. The period of inactivity is passed; the time for "up and doing" is here—and here to stay.

New York

It is learned in local brick circles that the brick plant of J. H. Connley, Berlin, Conn., was partially destroyed by fire, June 30, with loss reported in excess of \$50,000.

The Newburgh (N. Y.) Clay Products Corporation has been incorporated with a capital of \$50,000 to manufacture burned clay building products and other specialties. H. G. Mullen, T. B. Morgan and H. W. Sweet, Newburgh, are the incorporators.

The ERIE Shovel is reliable. Built far stronger than the usual standard.



**"3 men
and 1 Erie
provide our
shale"**

"We are tickled to death with our ERIE Shovel—could not run our plant without it. Three men and the ERIE easily give us enough shale to keep the plant supplied—enough for 100,000 brick a day."—D. D. Evans, General Mgr. WEST VIRGINIA PAVING & PRESSED BRICK CO., Huntington, W. Va.



Serves either as steam shovel or as locomotive crane, with clam shell bucket.

The W. Va. Paving & Pressed Brick Co. went into the steam-shovel question very thoroughly before buying their ERIE. They carefully compared different makes of shovels.

We advise you to be just as careful. Get the facts—then pick the best shovel.

Write for a copy of our Bulletin B.

BALL ENGINE CO., Erie, Pa.

Builders of ERIE Shovels and Cranes; BALL Engines

ERIE **Revolving Shovels**



Money-Making

Success from Start

Baird Pottery Machines are successful from the start in clay plants because they have speed, turn out better ware, and because, as one of our customers writes, "these machines require only unskilled laborers to operate them."

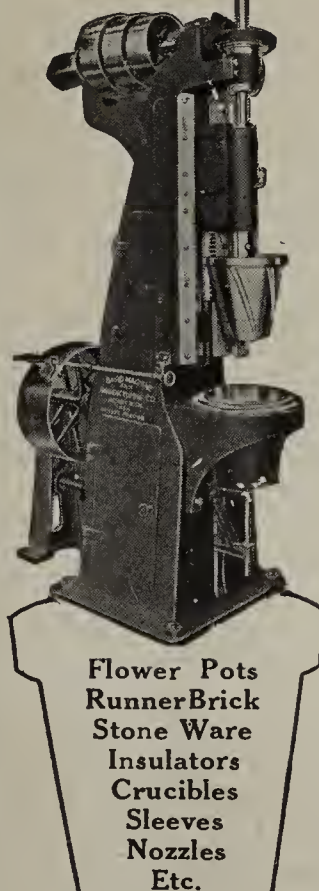
These three strong features—speed, quality of ware, and ease of operation—are going to be very important factors to clay products men in getting the specialty business that ceased to be manufactured last year.

Machines are adapted to the manufacture of Insulators, Stone Ware, Crucibles, Runner Bricks, Nozzles, etc., for which there is an unlimited field.

Send us a sample of clay with your inquiry.

Baird Machine & Mfg. Co.

265-69 Jefferson Ave., E.,
Detroit, Mich.



Flower Pots
Runner Brick
Stone Ware
Insulators
Crucibles
Sleeves
Nozzles
Etc.

Jenkins Valves

"They're Reliable"

an engineer said when asked why he used Jenkins valves: "When we close a Jenkins valve on a high pressure steam line, it **stays closed** and when we open it there's no sticking at the seat. And in the case of their gate valves, the wedge is easily raised or lowered and allows an unobstructed passage—it never 'drags' across the seat and fits **tight** when closed."

For high pressure steam service Jenkins Valves are made in Globe, Angle, Cross, Check, Y or Blow-off, Automatic Equalizing Stop and Check, and Gate patterns.

Jenkins valves are the result of 50 years of practical experience in making valves as they should be made for each specific use—know them by the Jenkins "Diamond Mark."

JENKINS BROS.

New York	Boston
Philadelphia	Chicago
Montreal	London



Rollin's Barium Carbonate

"We find that the use of Barium not only entirely eliminates the scum caused by sulphates, but deeper and richer colors result than would be expected." So writes a clay products company in Kentucky.

It is obvious to any clay products manufacturer that Barium Carbonate added to the pug mill or to the dry pan will produce brick and tile that command a higher price. It will build up more business than an inferior product which is "off color" and marred by white streaks.

Barium Carbonate makes the salt glaze stick to sewer pipe.

We can show you how the appearance of your ware can be improved, and can give you names of clay concerns who are profiting today by the use of Barium.

Write Us NOW

The Rollin Chemical Co.
(Inc.)

Charleston, W. Va.

Property of H. R. Heinicke, Inc., 147 Fourth Avenue, New York, manufacturer of chimneys and stacks, and property of the Globe Clay Co., an Ohio corporation, was disposed of at public sale by Francis P. Garvan, alien property custodian, on July 1.

Prices of common brick, face brick, hollow tile and other burned clay products at New York and vicinity hold firm, with no indication of any decline. Brick continues to sell at \$15 per thousand in wholesale lots alongside dock, making a quotation of \$17.85 delivered on the job. The strike of the barge captains has not, as yet, been settled, and this is tending to hamper operations. In order to have things move as near to normal as possible, the brick manufacturers are planning to establish local crews, shipped from their yards, to unload the brick on arrival at New York; it is expected to carry out this intention at once unless the men who usually engage in this work go back on the job; these men are out owing to the strike of the captains.

With the demand for common brick on the increase, the Hudson River brick plants are doing their best to increase production, at the same time seeking to reduce costs so that the market will be profitable. Labor difficulties still prevail in this section; it is exceedingly hard to get help of any kind, and production is considerably curtailed thru this situation. With a low rate of output as now seems destined to ensue, coupled with the call and forthcoming call, it would not be surprising if there is a shortage in the brick market at New York before fall. To draw on stocks and not replace means that such a condition confronts the business. It is predicted that if production costs increase in any way, that a corresponding increase in the present price of \$15 at New York will have to be made.

There is certainly no lag in construction circles in New York and vicinity at the present time. Things are moving, and moving in a manner quite satisfactory to all concerned. There is action in the air—an attitude of definite accomplishments, and the totals for building work now rounding up show just what this means. The last week in June proved to be a banner week up to the present time for this district, and including Northern New Jersey and New York state the aggregate amount of contracts let for new construction work of all kinds was \$20,000,000—this, in one week, is rather "going some." But New York knows how to do things and what is going on hereabouts should set a rather inspiring example to other parts of the country that are still a little "out of step" in regard to building operations. Demands are on edge for brick and other standard building products, while mason's materials of all kinds have been operating under a good call.

As an idea of the building activities now under way at New York, Brooklyn and Queens, it is interesting to note some of the more important projects. Plans are now being completed by Architect Frank H. Quinby, 99 Nassau Street, for the erection of a new brick and steel office building to be erected at William and John Streets, New York, at a cost of about \$1,000,000; the structure will be an addition to a present building, owned by the 111 William Street Corporation; a new thirteen-story apartment house to cost \$1,250,000 will be erected by the 25 Fifth Avenue Corporation at the corner of Ninth Street and Fifth Avenue, New York; a six-story brick factory, 40x100 feet, to cost about \$80,000 will be constructed by E. Greenfield Sons Co., 95 Lorimer Street, Brooklyn, manufacturer of candy products; L. Hirsch Sons, 220 Varet Street, Brooklyn, will erect a new four-story factory, 125x160 feet, at Flushing Avenue and Panes Street, to cost \$100,000; while five two-story,

brick residences, to cost \$46,000 will be constructed on East Seventh Street, by the Kensington Homes, Inc., Brooklyn.

Ohio

The Bloomingdale (Ohio) Tile & Brick Co. has reopened its plant for the season. Mayor W. R. McPherson is manager of the factory.

A meeting of the red group of the Ohio Face Brick Manufacturers' Association was held at the Deshler Hotel, Columbus, July 9, with a fairly good attendance.

Emmet Howard of the Columbus (Ohio) Brick Co., announces that he has recently booked a contract to supply the Smith Agricultural Chemical Co. with 225,000 acid brick for rebuilding a portion of its plant.

A meeting of the advisory committee of the Ohio Paving Brick Manufacturers' Association will be held in Columbus early in August. The exact date for the meeting has not been fixed. A number of important matters are to be discussed.

The Alhambra Tile Co.'s plant at 10th and Monroe streets, Newport, Ohio, was damaged to the extent of \$25,000 on June 26, by a blaze which started in the kilnroom. The loss is covered by insurance, and it is planned to rebuild the plant immediately.

Another letting of highway contracts will be made July 18 by the Ohio Highway Commission. Included in the list are several brick paving jobs. They are two in Butler County, one in Coshocton County, two in Franklin County, one in Guernsey County and one in Summit County.

One of the most interesting contracts to be let recently in the Cleveland districts is that to the Hydraulic-Press Brick Co. by the National Lamp Works. The material, according to H. H. Crowell, manager of the Cleveland branch, will consist of 500,000 Gokharas red brick, and will be used in the construction of three additional buildings at Nela Park, East Cleveland.

Face brick prices in Columbus and Central Ohio territory are extremely strong and all recent advances have been maintained. In fact there is every indication of still further advances in the standard shades. The labor situation is not the best because there is a scarcity of skilled men and they frequently leave the brick manufacturers to seek employment elsewhere. As a result of the labor situation and the higher manufacturing costs it is believed that an advance of about \$2 per M will soon be announced in this territory.

After being closed down for the period of the war, the large, modern brick plant of the Hocking Valley Products Co., at Greendale, Ohio, with a capacity for manufacturing some 25,000,000 face brick a year, has resumed operations, owing to the increasing demand. Orders received during the last thirty days at very satisfactory prices cover a territory from Canada to Florida and from New York to Iowa and Wisconsin. The officers look forward to a long period of building activity. The plant is operated by electric power, the company owning coal and clay mines, which are connected with the company's power station and brick factory by electric railways.

Home building has become quite active in Columbus, Ohio, as is attested by the reports of the city building department and the county recorder of deeds. These reports show an unusual amount of home building and the movement is getting stronger day by day. During the month of June the city building department issued 365 permits having a valu-

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Of Every Description

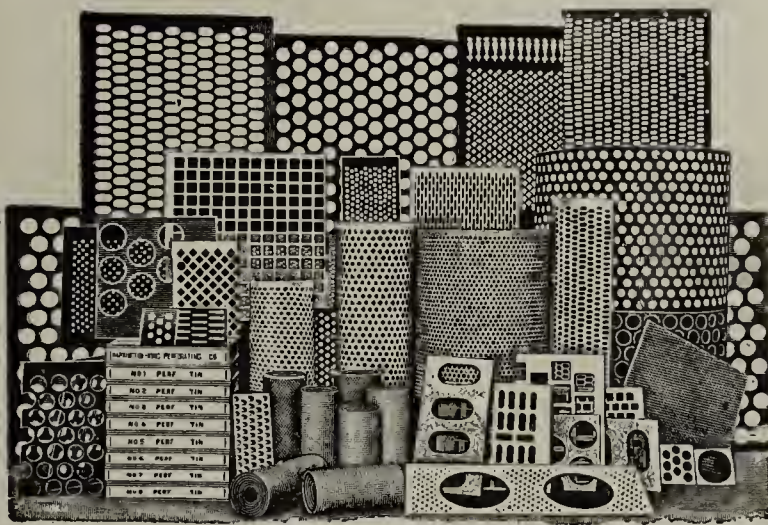
**For Screening Clay, Shale, Sand,
Gravel, Stone and Cement**

**No Other Screens Will Give You Equal Capacity,
Durability and Satisfaction**

The Harrington & King Perforating Co.

635 N. Union Ave., Chicago, Ill.

NEW YORK OFFICE: 114 Liberty St.



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for some way to relieve you of your sales worries? If so, advertise your ware—Building Brick, Building and Drain Tile, Sewer Pipe, Fire Brick, Terra Cotta, etc.—in

BUILDING SUPPLY NEWS

Advertising rates and sample copies cheerfully sent on request. Write today.

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paper in the
Building Field.*

*Endorsed by
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Building Supply News
610 Federal Street Chicago

BUILDING SUPPLY NEWS issues a current price list of your commodities in 73 cities thruout the U. S.

"The S S S Special" Automatic Soft Mud Brick Machine



The "S S S Special" is the ONLY Automatic Soft Mud Brick Machine. It is Brick Machine, Bumper, Dumper, and Sander, all combined in one Great Machine.

**It Saves Labor and
Improves Your Product**

The "S S S Special" means
Improvement Advancement Progress

The Arnold-Creager Co.
New London, Ohio

ation of \$509,375 as compared with 198 permits and a valuation of \$329,870 in June of last year. Since the first of the year the department has issued 1,662 permits having a valuation of \$2,719,740 as compared with 1,075 permits and a valuation of \$1,628,040 for the same period in 1918. Deeds filed since January 1 total 6,739 as compared with 4,115 deeds for the corresponding period in 1918. This increase shows the larger number of lots sold for home building purposes.

No more orders for prison-made brick will be received by the Ohio State brick plant at Junction City, is the announcement of the Ohio Board of Administration. The entire supply for the year has been disposed of and no more orders will be taken. The Ohio Highway Department will start at once advertising for brick on several road improvement jobs on which it was believed that prison-made brick would be used. Under the law, the Ohio Highway Commission must first ask the board of administration whether it will be able to furnish brick for road improvement projects and if it can the order is placed with the state. Otherwise the order is then advertised for other brick manufacturers to bid on. In addition to furnishing 3,000,000 brick for paving projects the plant has furnished brick for the hospital building at Orient and other jobs at various state institutions.

Oklahoma

The Muskogee (Okla.) Vitriified Brick Co. is going to build about fifteen round kilns this fall, in order to take care of the demand for the Muskogee Rug brick.

Pennsylvania

The Lock Haven Fire Brick Co. and the Lock Haven Mining Co., Lock Haven, Pa., have been merged under the name of the first mentioned company. The consolidated organization will operate with a capital of \$400,000.

The Ochs & Frey Brick Co., Allentown, Pa., is operating its plant on a basis of its normal annual production of about 10,000,000 common brick, and is furnishing good sized orders for building operations in this section. The company also deals in high grade fire brick and clay.

John E. Miller, who has recently taken charge of the Hazelton (Pa.) Brick Co.'s plant, which has been idle for the past two years, states that they are now making as good a brick as any common red brick or rough texture brick on the market and have some nice big orders on hand with more in sight. They look forward to a very good year. They are at present making some improvements which will double the capacity of the plant.

The brick manufacturing plant at Temple, Pa., has been acquired by the Maiden Creek Quarry Co., a new corporation organized recently by John J. Witman, Ernest B. Posey and Milton R. Rundle as the incorporators. The plant, which has a capacity of 15,000 brick daily, will be modernized, with machine presses and dryers, and its capacity will be doubled. The Pennsylvania Railroad will run a track into the property, which will produce dark Flemish type of building brick.

Among the interesting building operations at Philadelphia now about to be placed under way, and using brick as the essential material, are two new passenger stations for the Department of City Transit, at Front and Girard Streets, and Front and York Streets, to cost about \$50,000; two-story addition to the plant of the Abrasive Machine Co., Fraley and West James Street, to cost \$25,000; and two-

story and basement Sunday school at Fifty-fourth and Spruce Street, for the Bethany Temple Presbyterian Church, to cost about \$50,000.

The Maidencreek Quarry Co., Temple, Pa., recently organized, has acquired a local brick manufacturing plant, as a feature of its proposed operations. The yard has a capacity of about 15,000 brick per day, and the new owner plans to double this output at an early date. Considerable new machinery and equipment will be installed, including presses, dryers and other operating apparatus. The plant will specialize in the manufacture of high grade, dark Flemish type brick. Arrangements have been made with the Pennsylvania Railroad to extend a siding to the property to facilitate shipments. John J. Witman, Ernest B. Posey and Milton R. Rundle head the new company.

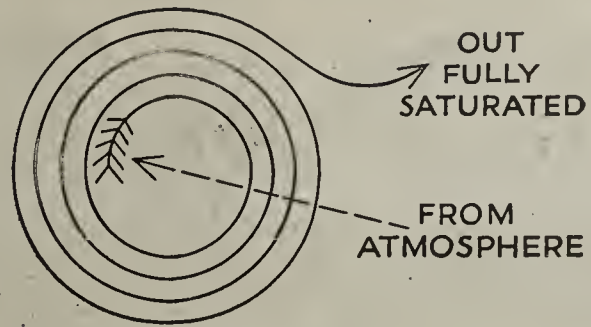
Quotations on building materials of all kinds hold firm at Philadelphia. Common brick is selling for about \$17 per thousand, and local yards are losing no opportunity to enhance production so as to be ready for the increased demand which is now "in the wind." Face brick is growing in call, and plans now being figured for structures in different parts of Eastern Pennsylvania call for this material, particularly in the lighter colors, in large quantities. The current price of good face brick is from \$40 to \$45 a thousand, with very select varieties running close to \$50. Fire brick is still in fair demand, with present quotation in the neighborhood of \$70 per thousand for high grade stock.

As president of the Master Builders' Exchange, Philadelphia, Pa., O. W. Ketcham, manufacturer of terra cotta specialties and dealer in high grade face brick, etc., has issued an interesting announcement covering the desirability of building at the present time. He says that those who are holding off should commission their builder to proceed at once. The prices of building materials are virtually stationary and will not decrease for some time, if at all. Labor conditions in Philadelphia are settled and will remain so, free of strikes, for at least a year to come. Materials are awaiting delivery. Some commodities have been produced in excess of the demand. Prices of old structures are in some cases inflated beyond the cost of a modern building of the same size and character. There can be no reason advanced for further hesitation; in fact, the conditions are steadily approaching the time when we will be faced with a shortage of labor.

The past fortnight has brought considerable increased activity in building circles in Philadelphia and outlying districts. While housing work is a big matter at issue, industrial operations are moving ahead in an encouraging manner, and a number of projects of this nature are now under way, or will soon be launched. Moreover, the Government is planning for extensive additions at the League Island Navy Yard—work that will require large quantities of common brick as well as fire brick. This latter project, in accord with approval of the Senate Committee on Appropriations, will embody an expenditure of about \$3,800,000 for the construction of a new machine shop for light work, to cost about \$400,000; new central power plant with distributing system to cost about \$500,000; new pattern shop to cost \$400,000, with machinery and facilities to handle guns, turrets, armor, etc., to cost about \$1,000,000; the Bureau of Yards & Docks will be in charge of the work.

Tennessee

The Chattanooga (Tenn.) Sewer Pipe Works recently applied to the Louisville District Freight Traffic Committee
(Continued on Page 162)



The Proctor Method of Air Recirculation

The above diagram roughly illustrates the highly efficient method of recirculating air in all Proctor Dryers.

Air is taken from the atmosphere, passed through the heating coils, then over the material being dried, then through the coils once more, then over the material being dried once more, and so on until the fully saturated air makes its exit.

It is impossible to fully saturate air in a single cycle.

It is decidedly uneconomical to waste the good heated air after the first cycle as long as it is capable of taking up still more moisture with slight reheating.

So that is why Proctor RECIRCULATES the air until every B. T. U. given to the air is made to perform useful service.

And that is one of the big reasons why Proctor Dryers are most economical.

No matter what your drying problem it will pay you to submit details to our engineers who will gladly advise without obligating you in the least.

We have had 35 years experience in the drying business and it is logical, is it not, that we should know how to make every dollar do its utmost?

Give us your conditions in detail in your first letter. Steam (live or exhaust)? Pressure? Kind of material? Quantity? Quality? Etc. Give all details and we will be enabled to reply accurately and promptly.

Send for Catalog Stating Materials to be Dried.

THE PHILADELPHIA TEXTILE MACHINERY COMPANY

PHILADELPHIA

PROVIDENCE, R. I. CHICAGO, ILL. CHARLOTTE, N. C.
Howard Building Hearst Building H. G. Mayer-Realty Bldg.

Rossendale-Reddaway FABRIC BELTS *for* EVERY SERVICE



More than a mile of "DURBAR"

solid woven cotton belting
—a single export order

These eight belts have a total length of 5520 feet, average 25 inches in width and weigh all told about 12½ tons—a "hefts" answer to the question "can a fabric belt take the place of leather"?

As a matter of fact, without considering the lower cost of "Durbar" compared to the double leather belt which would deliver equivalent power, there are many drives where a "Durbar" solid woven cotton belt stands up under service conditions that would prove the quick ruination of almost any other type of belting.

In the foreign service for which this belt shipment is intended, the conditions call for the highest grade of solid woven cotton belt—and "Durbar"—one of the various types of fabric belts made by The Rossendale-Reddaway Company—is the right belt for the particular drive. This ability to furnish the right belt for the particular drive is one of the advantages of the Rossendale-Reddaway line of fabric belts for every service.

Ask our engineering department for recommendations for your difficult drives. Their advice is competent—and free.

**The Rossendale-Reddaway
Belting & Hose Co.**

General Offices and Factory
NEWARK - - NEW JERSEY

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SOLE MAKERS OF



MADE IN THE U. S. A.

Q U E S T I O N S

A Two Cent Stamp May Bring
You Advice That Will Stop
a Waste, Improve Your Ware
or Lower Your Production Cost

Address all communications intended for this department to "Editor Questions and Answers," care of "Brick and Clay Record," Chicago.

Can You Furnish Aid on Dampers?

915. California—We are having trouble with our stack flue dampers in our magnesite kilns in which we burn ware that matures at cone 19-20. The metal dampers burn out and the fire clay dampers are cumbersome and the iron supports burn out. We have made the dampers of large fire clay tile with the supporting rods running thru so that they are protected from the direct action of the flame. The iron, however, is weakened by the intense heat and breaks, permitting the damper to fall.

We will be indeed grateful to you or any of your readers for helpful suggestions.

Searle has recommended a fire clay damper which he claims is satisfactory for working in kilns which burn as high as cone 17. This damper is made by using slabs 12 in. high and 2 in. thick, the iron bolts holding them being placed in the center and hence, fully protected from the heat.

Some of our readers have undoubtedly met with a similar problem as yours and solved it in some manner or other. *Brick and Clay Record* will be glad to receive suggestions from any of these readers as to how this problem can be solved.



Can You Aid This Correspondent?

914. Texas—We have a clay bank about two hundred yards from our clay shed. Up to the present time we have always transported this clay in small dump cars. We dynamite the clay from top to bottom and endeavor to maintain as straight a bank as possible because of the rain. The cars are pushed back by the men. This arrangement was satisfactory when labor was plentiful but now we are forced to resort to some other method if we wish to keep up with production.

The top of the kiln is soft clay and could be worked easily with any type of machine. At about the middle of the bank is a layer of clay rock which is from three to five inches thick and below this rock is a very hard shale. The top clay and bottom shale have to be mixed because a very good burn is not obtained if the top clay is used unmixed.

There are no machines of any kind in use for this purpose in our neighborhood. We have been thinking of using a clay planer but since we have never seen one in use we do not know whether it would meet our conditions. We also have had in mind the use of a steam shovel but since the bottom shale is very hard we are afraid the shovel will not handle it. If you could inform us of a clay plant that has a very hard shale and is using some form of machine, we would be glad to have you write us about it so that we may ask its aid.

There are many conditions that would have to be known before any attempt could be made to answer this ques-

a n d ANSWERS

Best Authorities in Every Clay working Branch Are Called Into Consultation—Their Advice is Free to You, Thru These Columns

Should a reply be desired by letter, send a stamped and addressed envelope with your question, and it will be answered promptly.

tion in a satisfactory manner. The hardness of the clay bank and its tendency to slide, are considerations to be taken into account before installing a shale planer. This machine, however, when practical, does very good work. There are, no doubt, a number of clay products manufacturers with similar conditions as those mentioned above and who would be in a position to offer our correspondent valuable advice. We will be glad to forward any suggestions that any one will furnish.

✱ ✱ ✱

Coal an Important Factor in Kentucky Brick Manufacture this Fall

Coal is expected to be one of the important factors in brick manufacturing this fall. During the month car lot prices have advanced twenty-five to thirty-five cents a ton on Eastern Kentucky mine run, while nut and slack prices are firmer. Western Kentucky spot prices are about the same, while all lump coal is firmer. A number of brick concerns have been discussing the advisability of stocking some of the low priced spot coal now on the market, but many of them haven't the capital to stock very far in advance.

The mine operators are having trouble in securing enough labor to operate full, and report that the car shortage is getting dangerous. The Louisville & Nashville Railroad has laid off about 2,000 shop men under orders from the Railroad Administration, and this has resulted in coal cars and other cars being in bad repair. Several complaints have been lodged with the Railroad Administration concerning the dilapidated condition of cars. The C. & O. railroad, is reported to have refused acceptance on about 1,500 cars lately, where the cars were in such poor shape that the company didn't want them on its lines.

With such conditions facing the coal operator prospects are for a serious coal shortage this winter, as stocks are low, production way off, and a big demand is bound to hit at the eleventh hour. The demand for block coal has been so keen that many operators have refused additional business, as they are unable to dispose of the resulting screenings or steam. The general demand for both mine run and screenings has been dull, resulting in a fight for steam business, and low markets. Every indication is for a high market, with not a single prospect for a lower market between now and next March.

✱ ✱ ✱

Material Handling Machinery Men Meet

The first semi-annual meeting of the Material Handling Machinery Manufacturers' Association, which inaugurated activities about three months ago, was held at the Hotel Astor, New York, June 11. Interesting morning and

GEO. A. FULLER CO.



"What Size Do You Want?"

"Allright, I'll have it on the job in half an hour."

That's the way the Geo. A. Fuller Co. handle their Pulsometers.

They keep a stock of various sizes on hand ready to dispatch to a pumping job on a moment's notice.

Summon a Pulsometer anytime— it's always ready—and never needs "tuning up."

Ship it any place, rig it up anywhere—

Place the intake line in the water—turn on the steam, and it **PUMPS**.

You don't need anybody to "run it"—A Pulsometer "looks after" itself. It draws and throws water as long as there's any in sight—

"Old John D." would be a candidate for a poorhouse if he had to make a living off the oil Pulsometers use—**THEY DON'T NEED OIL.**

There isn't a part that requires lubrication, no glands, no stuffing boxes, no pistons, no sliding parts, no contacts—absolutely no friction at any point.

For over fifty years Pulsometers have been first aid to contractors in getting their pumping jobs done in a hurry—

Yes—and the fellows who use them have bigger bank balances for it.

Let us go into detail with you about a Pulsometer and show how you'll be money ahead by using one.

PULSOMETER STEAM PUMP CO.

Executive Offices: 224 W. 42nd St., New York City

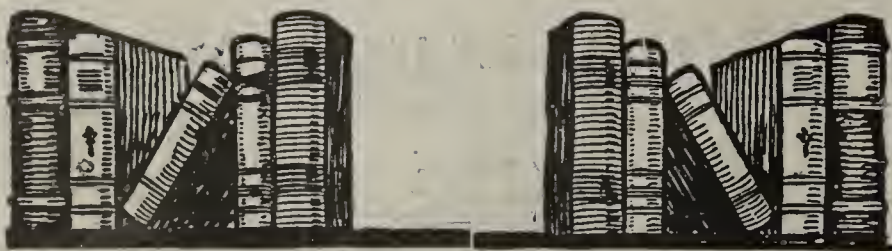
Agencies in all the principal cities

Boston: 391 Atlantic Avenue.	Cincinnati, Ohio: Elm and Pearl Streets.
Hattiesburg, Miss.: Care of J. L. Welborn.	Minneapolis, Minn.: 400 Temple Ct.
Philadelphia, Pa.: 235 Commercial Trust Bldg.	Milwaukee, Wis.: 206 Wells Street.
San Francisco, Calif.: 139 Townsend Street.	Cleveland, Ohio.: 1227 West Ninth Street.

F. H. Hopkins & Co., Montreal, Quebec, Canada.

PULSOMETER

STEAM PUMP



The Gateway to Better Things BOOKS

The Master Workman has a Master Mind—he knows perfectly his own merit, and in order to increase his knowledge, he studies the methods of other men—in the only way that he can—in books. If you would be master of your work you must read and know what others know.

Bricks and Tiles.....	\$1.50
Brick Drying (English edition).....	1.00
Bricklaying, Rudiments of Practical.....	.75
Bricklaying System	3.00
Brick Work (Walker).....	.65
Brickwork and Masonry.....	3.00
Building Construction and Superintendence, Part 1, Masons' Work.....	6.00
Bungalows, Camps and Mountain Houses.....	2.00
Ceramic Industries—A Treatise On (E. Bourry).....	7.25
Clay and Pottery Industries.....	6.00
Clays: Their Occurrence, Properties and Uses....	5.00
Clayworker's Handbook.....	2.50
Clay-Working Problems.....	1.50
Directory of Dealers.....	.50
Engines and Boilers.....	1.00
Engineering for Land Drainage.....	2.00
Estimating Frame and Brick Houses.....	1.00
Finding and Stopping Waste in Modern Boiler Rooms, Vol. 2.....	1.50
Garages and Motor Boat Houses.....	1.00
Glazer's Book.....	1.25
Hollow Tile House, The.....	2.50
How to Analyze Clay.....	2.00
How to Build Up Furnace Efficiency.....	1.00
Land Drainage	1.50
Manufacture of Roofing Tile, (English Edition)..	1.25
Manufacture of Roofing Tile (Worcester).....	.75
Modern Brickmaking.....	6.00
Notes on Pottery Clays.....	2.25
Observations on Pottery.....	.60
One Hundred Bungalows.....	.50
Pottery	1.25
Powdered Coal as a Fuel.....	3.00
Practical Brick and Tile Book.....	2.50
Practical Farm Drainage.....	1.40
Producer Gas and Gas Producers.....	4.00
Refractories and Furnaces.....	4.00
Rock Excavation, Handbook of.....	5.00
Scientific Industrial Efficiency.....	2.00
Scumming and Efflorescence.....	.50
Silos—Construction and Service.....	.65
Steam Power	2.00

Select the books that you want the most, and we'll send them to you postpaid upon receipt of price, but we can't send any books on approval. All foreign books subject to 15 per cent import duty.

Address, Book Department,

Brick and Clay Record
610 Federal Street, Chicago, Ill.

afternoon sessions were held, and steps were taken to show how labor saving machinery and equipment may be used to advantage in the various industries, and specific plans developed for general promotion work in connection with handling machinery and equipment of various kinds.

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A new heat-insulating material whose chief ingredient is a kind of clay has been developed in Sweden. This clay or "molera" is very porous; each grain seems to be hollow, and when burned is extremely light. The clay aggregate is mixed with cork before burning. Its chief use is as a lagging for steam pipes and boilers but it may also be used for sound proofing and for deadening the transmission of vibration.

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WAKE OF THE NEWS

(Continued from Page 159)

for publication of rates on sewer pipe in car lots from Chattanooga to Rocky Mount, Va., to be established at two cents per hundred pounds less than the rate from Louisville.

Contracts will be let shortly for the erection of a two-story brick store building on the east side of South Main Street, near Huling Avenue, 26 x 100 feet. It will cost about \$25,000. R. L. Jones is having this building erected.

The Herbert-Fischer Brick Co., capital stock \$200,000, has made application for a charter at Memphis, Tenn., to manufacture brick, tile and other burned clay products. The incorporators are: B. L. Mallory, G. W. McRae, W. W. Fischer, J. E. McCadden, and William D. Kyser.

Washington

The general contract for the erection of a one-story brick garage, 130x60 feet, on Bell Street, between Third and Fourth Avenues, Seattle, Wash., has been awarded to the Great Northern Construction Co. Plans were prepared by R. Hamilton Rowe, of the American Bank Building, Seattle.

Canada

The officers of the National Brick Co., of Laprairie, are: H. T. Trenholme, president; R. N. Ballantyne, vice-president, and A. T. Alexander, secretary.

At the annual horse show, Toronto, July 1, John Price, Limited, won both first and second prizes in Class 7, open to brick manufacturers.

Maclure Fireclays, Ltd., Kilgard, B. C., has been incorporated with a capital of \$50,000 to acquire clay-bearing land and deal in clay and clay products.

Toronto Brick, Limited, has been incorporated, with head office in Toronto, Ont. The provisional directors are: W. Field, G. M. Orr, Miriam Jackson, Annie Redpath and Elizabeth McQuarrie.

F. B. McFarran, manager Interprovincial Brick Co., Toronto, was married on June 12 to Miss Florence Barr. The executives of the Canadian National Clay Products Association presented him with some cut glass pieces.

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

The Fate-Root-Heath Company

In order to meet the large and growing demand for Plymouth Industrial Locomotives, Clayworking Machinery and other Plymouth products, The Fate-Root-Heath Co., of Plymouth, Ohio, has been incorporated with a capital stock of \$1,000,000 and has taken over the property and business of The J. D. Fate Co. and The Root-Heath Mfg. Co., the plants of the two companies adjoining.

The J. D. Fate Co. was started in Plymouth in 1887, and has been in successful operation since then. Its original business consisted of the manufacture of brick and tile-making machinery, and it has built up and maintains an unexcelled reputation and a large established trade in this line. In 1914 they brought out and perfected the Plymouth Gasoline Locomotive for construction, mining and plantation work, and intra-plant switching. This locomotive has met with wonderful success, and is used by some of the largest contractors and industrial concerns in the world. One concern alone has seventeen and another fourteen in daily operation.

The Root-Heath Mfg. Co. was started in Plymouth in 1895. It manufactures a line of hardware specialties, consisting of Shoe Repair Outfits, Shoe Lasts and Stands, Riveting Machines, Corn Shellers, Grist Mills, etc., which sell to jobbers all over the United States. In addition to its general line of products it has developed a patented machine for sharpening lawn mowers, which has a national reputation. The company also has an extensive foreign trade, and its business and prospects were never better than at present.

The new company owns about twelve acres of land, upon which are now located fifteen buildings with approximately a ground floor space of 160,000 feet. The present buildings are of brick and iron construction, and the equipment is modern in every respect. A new foundry building is now under construction in addition to the present foundry, which will give a floor area of 300 by 200 feet; also a new power house and two-story office building. Fully \$150,000 will be expended in new construction and equipment, all contracts having been placed and equipment purchased.

The officers of the new company are as follows:

President, J. A. Root; Vice-President and General Manager, C. E. Heath; Second Vice-President, H. F. Root; Secretary, P. H. Root; Treasurer, H. R. Sykes; Sales Manager, H. J. Votaw.

✻ ✻ ✻

Introducing C. H. Burke

C. H. Burk, an energetic young business man of New London, Ohio, is the new Secretary and General Manager of The Arnold-Creager Co., following the resignation of J. F. Aten, who is president and one of the organizers of The Superior Brick Co., Cleveland, referred to in the July 1 issue.

Mr. Aten had been connected with The Arnold-Creager Co. for the past eight years, during which time the company made steady progress. His many friends will be glad to learn of his even closer connection with the clayworking industry; and it is interesting to note that his new plant is installing all Arnold-Creager brick machinery, which includes

Mr. Aten speaks a good word for his successor, Mr. Burk, the SSS Special Automatic brick machine.

and in behalf of the industry we wish them both success in their new connections.

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"Haul-Age" Is Name of Garford Publication

The new dealer publication of The Garford Motor Truck Co., which made its initial appearance in May, is to be known as "Haul-Age."

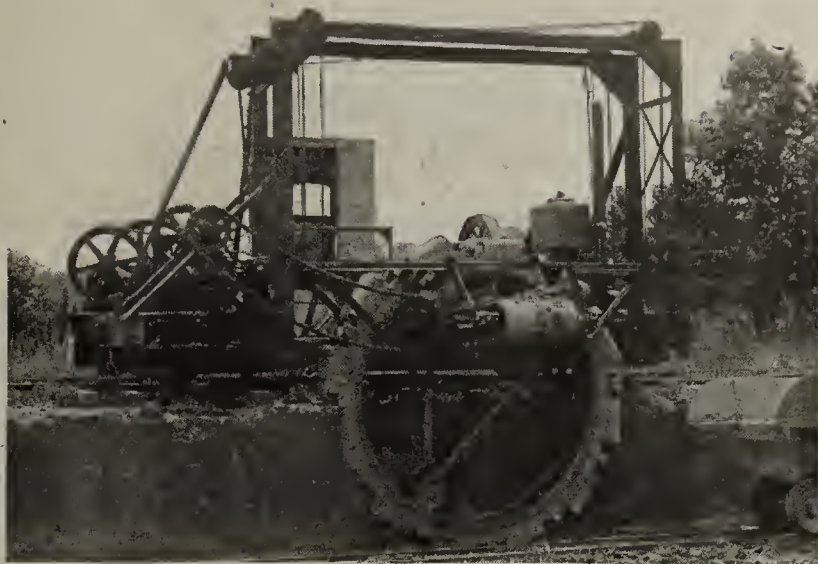


Figure the cost of UP-KEEP

Perfect mixture and saving in labor are not the only points to consider when you buy a clay digging machine—cost of upkeep is of equal importance. A digger that mixes clay and saves labor, but runs up expense for fuel, and repairs, is an expensive machine at any price.

"The up-keep of the Buckeye Traction Clay and Shale Digger is small," writes one of our customers. "The only thing wearing out to any extent being the spades of the cutters that shear the clay off, and the side cutters. Our blacksmith relays these with steel again. It takes only two sets of cutters to run the season." The cost for oil and grease is negligible.

Write us about the conditions in your clay pit. We will be pleased to send you figures and data.

The Buckeye Traction Ditcher Co.
Findlay, Ohio

Buckeye

Traction Digger

The new Model C. M. is equipped with a combination conveyor which enables operator to change his discharge from pit to bank delivery, alternating as desired.



As If Especially Built For the Brick and Clay Industry

Kissel Trucks stand up under continuous service and capacity loads—they are powered for any grade—geared for consistent speed and designed for adaption to your every haulage requirement.

Dependability—power—economy—long life—stamina—to get there and back—the very characteristics you would build into a truck were you the designer.

The unusual strength of the Kissel Truck chassis, the advanced engineering principles and structural features, the Kissel-built power plant, brakes of locomotive strength—these are the real sources of Kissel Truck superiority.

Kissel Truck owners in the Brick and Clay Industry will gladly verify Kissel Truck superiority. See your nearest Kissel dealer. Five different sizes— $\frac{3}{4}$ -ton to 5-ton models.

KISSEL MOTOR CAR CO., Hartford, Wis., U.S.A.

KISSEL TRUCKS

This name has been selected from scores of suggestions submitted in a prize contest outlined in the first issue.

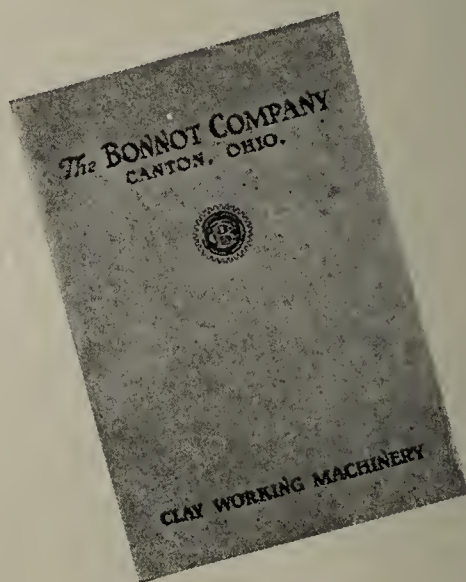
While the new publication is devoted primarily to the interests of Garford distributors and dealers its pages contain numerous articles of timely interest to the entire automotive industry. Julian M. Chase, advertising manager of The Garford Motor Truck Co., is editor of the journal, which is published monthly.

✂ ✂ ✂

"Let Us Standardize Your Plant"

After you have gone carefully thru the new catalog issued by The Bonnot Company, Canton, Ohio, and noted their complete line of clayworking machinery, you can better understand what it means to have your plant standardized with Bonnot equipment.

Their line of combined brick machines and pugmills includes both single and double geared machines, and any capacity from 25,000 to 150,000 daily. They also have a complete line of auger machines and pugmills, both single and double geared.



New Bonnot Catalog.

The Bonnot Company have a department for testing clays under actual working conditions, and this is a very important service, as clays are of such variety and act so differently under the process of forming and burning, that it is impossible to decide just what a clay is fit for until it has undergone a practical working test.

Dry pans, represses, screens, clay elevators, disintegrators, winding drums, crushing rolls, turntables, transfer-dump and dryer cars form part of the varied Bonnot line.

A copy of the new catalog may be obtained upon request.

✂ ✂ ✂

E. I. du Pont de Nemours & Co., Wilmington, have issued a formal announcement setting forth that the company, nor any of its subsidiaries, officers or directors are connected with or interested in the Nemours Trading Corporation, the Allied Industries Corporation, the Merchants' & Manufacturers' Exchange, or the French-American Constructive Corporation. The first noted organization is specializing in export trade operations and has developed a ceramic branch to promote American goods in foreign countries; headquarters are maintained in New York.

✂ ✂ ✂

The Philadelphia Textile Machinery Co., Sixth Street and Tabor Road, Philadelphia, Pa., manufacturer of drying equipment for ceramic plants, etc., has awarded a contract to the Hennebique Construction Co., 1170 Broadway, New York, for the construction of a one-story addition to its plant, 75x240 ft., to cost about \$50,000.

✂ ✂ ✂

The Walter A. Zelnicker Supply Co., of St. Louis, has added 2,000 sq. ft. to its office space at 325 Locust Street, St. Louis, Mo., an increase of $33\frac{1}{3}$ per cent. This improvement will enable the organization to continue to efficiently render Zelnicker service.

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BRICK *and* CLAY RECORD

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

Offers \$50.00 Prize for Trade Name

The Los Angeles (Cal.) Pressed Brick Co. has written "Brick and Clay Record," asking it to give the announcement printed below the position and prominence in its paper that it thought was warranted. "Brick and Clay Record" believes that a trade name for a clay product that has been developed to a high state of perfection by a concern who also lays great stress on Service, is eminently desirable.

The matter of the selection of a trade name by the Los Angeles Pressed Brick Co. has been given careful consideration and the decision is, that it merits the greatest prominence. A reason for attaching this great importance to the matter is, that in the past, in our endeavor to improve the manufacturing phase of the industry, tho it has deserved every bit of attention that has been given it, the selling end of the business has not kept in step with the general progress of the industry. It is therefore urged that greater emphasis be placed on this important side of the clay business. It would be a pleasure to see more manufacturers adopting a trade name for their product that will immediately associate with it, in the public's mind, such attributes as Design, Quality, Service, and so on. Accordingly, the announcement is published herewith as part of our own space, the "Editor's Corner."

ANNOUNCEMENT

The Los Angeles Pressed Brick Co. offers a \$50.00 Victory Loan Bond as a prize, in a contest open to all readers of "Brick and Clay Record," for the trade name they select as the best from the suggestions received under the conditions given below.

"For a long time we have realized the value and need of some trade name which could be applied to one or more of the products manufactured by us and used in connection with all of our advertising," writes the Los Angeles Pressed Brick Co., manufacturers of pressed, enameled and face brick, fireproofing, refractories, roofing, mantel, faience and quarry tile, sewer pipe, drain tile and architectural terra cotta.

As an example, "Tapestry" face brick, "Natco" hollow tile, "Hy-Tex" brick are brief and descriptive. The name should be short, easily remembered, not hard to pronounce—a hyphenated name would not be objectionable but a name of one word with not more than five letters

would be preferable. The word "Lapco" is barred for the reason that name has already been coined and is in use by some other concern. For suggestions, the reader is referred to page containing trade names now in use, which appears in each issue of "Brick and Clay Record."

All trade name suggestions should be mailed so as to reach the offices of "Brick and Clay Record" not later than September 30, 1919. To insure equality to everyone, each trade name suggested will be given a number. Trade names with numbers will then be sent to the Los Angeles Pressed Brick Co., who will make selection of the winning trade name from those submitted and report to "Brick and Clay Record" where the name of the lucky one will be filed. The names of those making suggestions will be kept secret in the offices of "Brick and Clay Record."

The prize is worth while; the contest is interesting. Let's have your suggestion.

The EDITOR'S CORNER

What Means This Stir?

WE DO NOT KNOW what you may think of the announcement of the three-year promotional and publicity campaign by the Common Brick Manufacturers' Association of America, but to us the information that the brickmakers are soon going to speak to the prospective home owners of America in a big way thru the printed page is exceedingly auspicious for the whole clay products manufacturing industry.

With the exception of the work of the Building Brick Association, of which William Hanley was president, the whole history of promotional effort among common brick manufacturers could be written on one small sheet of paper.

But now, the common brick manufacturers are in earnest. Casting aside the petty plans and feeble organization of the past, which however commendable was wholly inadequate, the brickmen are going at the task in a big way. Manufacturers of approximately four billion commons are to be assessed in such a way as to produce *sufficient* money to do the job right. Already an architectural expert has been employed to supervise that particular phase of the campaign. Later, other experts and assistants will no doubt be chosen to "carry on" in their particular departments.

But what does all of this stir mean? It means this: An increased sale of common brick is going to result in more face brick being used. On the other hand the launching of the three-year promotional and publicity campaign by the face brick manufacturers is surely going to result in the sale of more commons. The manufacture and distribution of more commons is also going to result in the sale of many more thousand pieces of hollow clay building tile for backing up purposes and for partitions in houses. But the hollow-tile manufacturers are also planning an advertising campaign which will help the sale of common brick. Every additional home or building that is erected thru the efforts of the above mentioned branches of the clay products industry is surely going to result in the use of more sewer pipe, for sanitation is essential to every house. Architectural terra cotta will also get a slice of the pie because that material is fast coming into favor for decorative purposes on brick buildings.

And what shall we more say of the possibilities of the sale of more flue lining to prevent chimney fires and of wall coping to protect the tops of the walls and of drain tile for the drainage of building sites and of mantel brick and of mantel tile as well as fire

brick for the fireplace, and of paving brick for foundation work? We tell you men, you may think what you may but the future of the clay products manufacturing industry looks pretty good to us.

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Was It a Wise Move?

THE DAILY PRESS has just announced that the war department at Washington has discontinued the promotion of public works. This decision and subsequent action came at a time when there was under contract more than \$450,000,000 of this class of work, this sum representing about one-third of the public work available.

To the clay products manufacturer, this action may seem disappointing, perhaps disgusting, and it is only natural that one should inquire into Uncle Sam's motives. According to the daily press, labor surplus has disappeared and the war department felt that a further forcing of public construction in view of such condition would unnecessarily increase the cost of private construction.

If the further promotion of public works on the part of the war department will result in an increased cost of construction, we are inclined to believe that our Uncle Samuel acted wisely in decreeing that such promotion should cease, because one of the greatest obstacles to the progress of private construction has been the inability to get loans in sufficient volume and of sufficient amount to finance this class of work. The increased cost of construction has had considerable to do with the reluctance of loaning organizations to loosen up for private work.

It is safe to say that ninety-nine per cent. of clay products manufacturers are unalterably opposed to high prices. Because building materials are selling at a considerable advance over pre-war figures, it does not necessarily follow that the clay products manufacturer is making more money, in fact, in many instances he is not making as much as he did when prices were lower. No manufacturer is happy under circumstances and conditions when both labor and materials are in a rising market.

So far as we know, the war department has no intention of discouraging public works. If we understand the situation aright, the war department is simply going to cease the promotion of public works, passing the initiative on to municipal, county and state agencies. In other words, the natural law of supply and demand will now operate, which reminds us that we are about returned to a normal condition in the building industry of America.

MANUFACTURERS' VIEWS *on* NEWSPAPER ADVERTISING

Interesting Replies From Twelve Manufacturers on the Question of Whether or Not the Daily Newspaper is a Good Medium for Clay Products Advertising are Presented Herewith

DOES ADVERTISING of clay products in newspapers pay? A prominent manufacturer who has done considerable publicity work in newspapers was very desirous of securing from other manufacturers of clay goods, both past and present advertisers, opinions on this very big question which interests every clay producer. *Brick and Clay Record* accordingly wrote to a number of manufacturers located in representative sections of the entire country asking their frank opinion as to the value of newspapers as an advertising medium as compared with other methods. It was also asked whether the manufacturer thought the newspaper advertising had justified the expense incurred.

Twelve replies were received to the letter, showing a wide variance of views on advertising. One manufacturer was not in favor of any newspaper publicity for clay products; six were directly for this form of promotional work; two were noncommittal and three were of a sort of lukewarm attitude towards using space in daily papers. Some of the replies are extremely interesting, and valuable information can be gleaned from them. Rather than give an analysis of the replies, *Brick and Clay Record* believes its readers will find it of greater value to read the brief quotations of the various letters which are given below.

1. It depends entirely upon the class of material and the market for it, as to whether newspaper or magazine advertising is the best. Not two situations are alike and it is up to each one to decide his own particular case.

2. We believe there is no question as to the value of the daily newspaper as a local advertising medium. We cannot, however, give you our opinion based on practical experience as all of our advertising is limited to mediums of national circulation. (This reply came from a very large manufacturer of hollow tile).

NEWSPAPERS GOOD WHEN QUICK ACTION IS NEEDED

3. Your inquiry regarding the relative merits of advertising

instance, if the retailers were going to boost a "Build a Home" scheme during six weeks in the spring or fall, then it would be of value to the brick men or material men, in general, to keep themselves before the public thru the newspapers—magazines in this instance would be no good.

Or if he were interested in making a drive of his own in his particular community at some particular time, an appeal thru the newspapers would be the best advertising to approach the public. But if the campaign is a general one and meant to fix a trademark in the public mind, creating goodwill for his product, or at any rate securing general familiarity with the product, then I say the newspapers would be too expensive and too local to secure the results. The magazine would be very much better for that purpose.

The newspaper would be a splendid medium for the public if the manufacturer had enough money to keep the thing going every day over a considerable period of time; but that he cannot do. The reading interest of the daily paper lasts for the day or even only for the hourly edition. Interest would therefore have to be kept up by frequent repetitions. Besides, the newspaper advertising is peculiarly suited to passing attractions which the department stores offer, or the general retail trade, where the people are looking for daily bargains, but where you want to create a cumulative effect, it is necessary to use those mediums that have a sort of a long continued interest to the reader, such as a monthly or weekly magazine. For examples, my ad in the "American Magazine" has a chance to be seen thirty times during the month; my same ad in the daily paper would be seen once and seen by a great many people who would have no interest in building. Of course, this is the case in all advertising, but I do not believe so much so with magazines as with the fugitive issue of the daily paper. But as I said, every campaign, local or general must be analyzed upon its merits, sometimes the newspapers would serve the purpose best and other times the magazine, "you pays your money and takes your choice."

NOT IN FAVOR OF SPECIAL EDITIONS

4. Our experience has been very limited. The only newspaper space that we have taken regularly has been card space in the classified business directory page of the local newspapers. This card appears three times a week. We have been carrying this card for about two years, and we believe it is worth what it cost, tho we have been unable to trace but few inquiries directly to it.

It is our opinion that regular newspaper advertising pays in the long run, but the immediate results are not noticeable. We think that special edition advertising is money wasted.

5. We believe that the use of daily newspapers, by getting across news items together with the advertising certainly does some good. As a local proposition, I would much prefer newspapers to magazines, but for a nation-wide proposition, the magazines would be the best.

6. I have never been much in favor of this method com-



Sample of Newspaper Advertising Copy, Three Columns Wide, Used by the Sheridan Press Brick & Tile Co. in the "Sheridan (Wyo.) Post."

clay products in newspapers or general magazines cannot be answered in any degree of satisfaction unless one knows the exact circumstances of the specific campaign intended. For

pared with others, first, on account of high cost and secondly, I believe that prospective builders are always influenced by their architects. I have always been of the opinion that a system of advertising direct to the architects calling attention to the comparative slight difference in the cost of cement or frame construction in comparison with brick is the proper method to obtain the best results.

7. It is quite difficult to answer your question without going into the matter on a broad scale. We believe that certain newspaper advertising is effective when properly used. We however, believe in a general way that as far as our industry is concerned that promiscuous advertising would be a waste of money. We are firm believers in the personal touch attained by the sending of literature descriptive of our product direct to the prospect. However, a certain amount of general publicity is more or less valuable to any industry.

USING DAILY PAPERS AND MAGAZINES

8. We are running an advertising campaign now in which we are using fourteen daily newspapers. In addition to this we are advertising in several industrial papers and doing direct advertising in the shape of letters and calendars sent out monthly, and sometimes twice a month.

The Georgia Brick Manufacturers' Association adopted a six-months' advertising campaign in which they will use sixteen daily newspapers, in addition to "The Southern Cultivator."

9. We have never found it necessary to resort to either the newspaper or magazine medium to dispose of our product. Our sales do not cover an exceedingly wide territory and therefore magazine advertising would be of very little value to us while it would be possible to derive results from newspaper advertising which would be more of a local nature.

10. Noncommittal.

11. Regret that I cannot give you some information along this line, but I have not engaged in doing daily newspaper advertising to any extent. Sometime ago we carried copy in the Duluth and Omaha papers and our dealers felt that they obtained good results from it, but our principal campaigns have been in the farm papers, as we desire to increase our business with the local lumber dealer and in the farming communities.

FINDS NEWSPAPER ADVERTISING HELPFUL

12. We have found newspaper advertising very efficient indeed, in building up our business. We are also using magazine advertising with splendid results. It is difficult to draw a line of comparison between the two, because they, in a large measure, accomplish different results, and we would not attempt to get along without either of them.

The newspaper has the advantage of being less expensive, and thru the use of newspapers, readers can be reached much more frequently than is the case with most magazines. On the other hand, magazines permit a higher type of advertising in that half-tones and a higher grade of art work can be used, than with newspapers which require line cuts, as you of course know.

It has been our experience that thru our newspaper advertising we reach the public at large to a greater extent than thru any other medium. While comparatively few of our newspaper readers are prospects for our line, seeing our material advertised in their paper gives the general public a good opinion of it, and one can never tell when a prospective builder may be influenced one way or another by some chance remark made by a person who is not himself a prospect, nor may never be, for years at least.

Magazine advertising, because of its greater possibilities along the line of better art work, and other features thereof which I do not need to call your attention to; is especially good, I feel, for face brick, terra cotta, and other material

where appearance and atmosphere, rather than service, constitutes the chief appeal.

These replies seem to indicate that the kind of advertising recommended for clay products depends among other things upon the local conditions, extent of market, kind of

Building for the Future

America—great, big, powerful America—is in the throes of a rebuilding era that is without a counterpart in her history. Uncle Sam has held a restraining hand on building activities for many long, weary months. But now—with peace, prosperity and happiness—the building idea comes with a great rush. It is the most important mission America has to consider. And whether it be a modest bungalow or a 16-story sky-scraper, all the materials that enter into it are now available. Long deferred plans will now be resurrected for immediate revision.

The home coming soldiers and sailors will help along in the reconstruction work; their brains and brawn—their sinew and strength will form an integral part of the intensive building program.

The following firms are ready to confer with you and explain their facilities; their judgment will help you solve your building problems—they are alert, resourceful and reliable.

THE F. P. COLLINS PAINT CO., INC. 325 W. FAYETTE ST., PHOENIX, ARIZONA 1911 THE HOME OF LAWRENCE PAINTS AND PAINT AND LUMBERY FURNISHES	WILSON & GREENE LUMBER CO. LUMBER AND GENERAL MILL WORK	CONDUIT-MILLER CO., INC. LIGHTING FIXTURES, ELECTRICAL CONTRACTING, REPAIRS
DAWSON BROTHERS GENERAL CONTRACTORS	PATTEN CUT STONE CO., INC. CUT ST. IN, CURBING AND BUILDING STONE	JOHN H. LYONS, INC. LUMBER, INTERIOR AND EXTERIOR WOOD- WORK—ALMOST ANYTHING MADE OF WOOD
MANN & HUNTER LUMBER CO. LUMBER, SASH, DOORS AND INTERIOR TRIM	THE MARKERT MFG. CO. SASH, DOORS, INTERIOR WOODWORK	STEARNS & HOLMES MAGNIFICENT TILE AND SLATE CONTRACTORS
CUMMINS BRICK AND TILE CO. BUILD WITH BRICK AND BE SATISFIED 6 - 8 R. BUILDING, SYRACUSE, N. Y.		

Cooperative Advertising by Various Building Material Firms
Urging Building Construction Rather Than Pushing Any Particular Product.

product and the length of campaign. *Brick and Clay Record* will be glad to hear from other manufacturers on this big question.

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High Alumina Clay in Missouri

An interesting description of diaspore clay, a fire clay recently discovered associated with the flint clays of Missouri, is given in the biennial report of the Missouri Bureau of Geology and Mines, of which H. A. Buehler is director and state geologist, Rolla, Mo. This clay is usually high in alumina; one analysis showed an alumina content of 73.73 per cent. It has recently been used as an ingredient of refractories and abrasives. Shipments in commercial quantities were first begun in 1918.

A chapter on clays and clay products includes a list of manufacturers, kind and amount of products produced, and gives a description and location of a large number of clay beds.

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Merger of Silica Interests at Johnstown

A new brick company has just completed organization at Johnstown, Pa., with a capital stock of \$500,000, and will be known as the Van Dyke Silica Brick Co. Indications point to the fact that the new corporation is a consolidation of a number of operating companies in the Johnstown district. Among those individuals identified with the new company

are: Russell C. Love, Louis G. Zang, Albert M. Swank, Frank D. Phillips, David and Edward A. Barry, William H. and Henry Y. Haws. These gentlemen are at present the owners of the brick plants of the South Fork Fire Brick Co., Hiram Swank Sons, Inc., and Climax Fire Brick Co., factories of which are located in Johnstown, South Fork and Climax, in Clarion county; Irvona, Clearfield county, and Clymer, Indiana county. With the one possible exception of the Van Dyke works all of the concerns are engaged exclusively in the manufacturing of fire clay brick. The Van Dyke company will manufacture silica brick, magnesite brick and chrome ore brick. The company owns six thousand acres of ganister land at Van Dyke, in Juniata County, where work has already been started upon the construction of one of

the most modern brick manufacturing plants in the country. The several additional products will be made at the new works. With the addition of silica brick, the production of the new company will include every character of refractory brick required in the United States.

The main offices of the company will be maintained at Johnstown, Pa., and the officers are as follows: President, Henry Y. Haws; vice-president, Ralph L. Swank; secretary, Edward A. Barry; treasurer, Frank D. Phillips; general manager, William H. Haws. The formation of the new company has created considerable interest among the brick trade thruout the western Pennsylvania district, which has taken a further step in the upward tendency to increase the production of refractory materials.



FORESEE STAMPEDE *for* BUILDING MATERIALS *in* GOTHAM *when* WAGE DISPUTES *are* SETTLED

LABOR STRIKES in the building trades are acting as the sole barrier to a riotous condition in building material demand, according to The Dow Service Daily Building Reports of July 21.

From a low level in building material movement last February to the present time building material movements out of distributors' yards to actual consumption on the jobs in Manhattan and Brooklyn there has been a gain of 104 per cent., all of which time has been marked by labor strikes in the building trades which have retarded work to almost war-time extent.

During that time and up to within the last two weeks, manufacturers of building materials have not been able to keep pace with the demand. This is especially true of common brick, lime, plaster, lumber, cement and concrete ingredients. The classification includes roofing materials. It has had its effect also upon fabricated steel as shown by the fact that in the month of June 65 per cent. of the country's bridge and structural shop capacity has been contracted for. May showed only 49 per cent.; April only 24½ per cent.

This week shows a further advance in the price of copper, an advance of 45 cents in the price per ton of cement lath mortar, both sanded and brown. One firm has advanced the price of bright wire nails from \$2 to \$5 a ton. The expected advance in plaster became effective July 14. A change upward of one cent in plaster boards has become effective. Lumber price movements are decidedly forward. Figures on a small building operation near New York showed a difference upward of \$114 in June, because the owner hesitated to accept what he considered excessively high prices submitted to him thirty days previous. The prices for the same material today show an advance of nearly \$200 over the first figure.

BIG ADVANCE IN PRICE OF PAINTS

The trade expects advances in price of fireproofing hollow tile, wire lath and another advance of 50 cents a thousand is to become effective on or about August 1 on wood lath. Paint interests have circularized the trade to the effect that big business is ahead, but at higher prices. The Standard Paint Co., as an example, is operating its new roofing plant night and day and is still running behind its orders and some of the largest varnish houses are increasing their plants with new buildings whose capacities are already taxed by forward orders. In consequence prices were advanced on July

16 with indications of a still further advance to be made later. Pipe prices are not considered stable.

Practically the only commodities that have not yet felt the latest price rise are structural steel, cement, common brick, domestic building stone and architectural terra cotta.

Building material market analysts reluctantly admit that if demand, checked as it is by strikes and lockouts in the distributing market, can so far exceed supply, settlement of labor disputes with a resultant free building market will bring about a price peak by the turn of the next building season that will greatly over top any of the price levels ruling during war times or at any other period. Price levels can be held back only by maximum production at plants of all kinds and some of the building material manufactures have ordered capacity production to keep up with the demand, the Atlas Portland Cement Co., chief among those taking such steps. The manufacturers foresee the stampede for building materials that is already shaping itself when the day arrives that brings the final settlement on building trades wage disputes.

BARGE CAPTAINS AND MANUFACTURERS AT DEADLOCK

The local brick supply situation took an unexpectedly negative turn as the week closed with a deadlock between the brick barge captains and the manufacturers. The latter held a meeting on Thursday, reaffirmed their intention not to grant the terms demanded by the captains and adjourned for thirty days leaving the situation entirely in charge of the committee of which William K. Hammond is chairman. The barge captains also met, reaffirming their position, and decided to hold out on their original demands for \$135 a month.

In the meantime some brick are coming down the river for this market, manned by men who are willing to work at the compromise advance that the manufacturers offered. This brick is being unloaded at some distributing points, but no boats are being unloaded at the brick docks at West 52nd Street, nor at Wallabout, Gowanus Canal or other points. At the points in Brooklyn where brick barges are being discharged, some of the men refused to unload for certain firms. This brings about discrimination in favor of some interests and as a result the order has become operative to unload for all or for none. It remains to be seen today whether Brooklyn will be able to get brick unloaded at all this week or whether everyone will be supplied. The manufacturers will have tugs on hand to take the barges to other distributing centers in Manhattan if the Brooklyn unloaders fail to conform to this rule.

INDUSTRIAL DEMOCRACY STOPS STRIKE

How Plan Settles Troubles—What Occurred in Passaic Plant

By B. C. Forbes

Editor's Note.—The following is the first of a series of articles descriptive of a system of handling labor which has won phenomenally successful results and which is being taken up with avidity by corporations all over the country. Until lately the plan was not given to the public, but its originator, John Leitch, a prominent business engineer, was finally induced to publish the facts in order that this solution of the eternal capital-versus-labor problem might become available for the whole industrial and business world.

The writer of this series, B. C. Forbes, has studied and investigated at first hand the operation of the plan. Mr. Forbes will present the views of both employers and workers who have had practical experience with Industrial Democracy.

THE WORKERS of one plant stood solid thru all the recent strikes at Passaic, N. J. Peace was preserved there by the introduction of Industrial Democracy, just as peace, harmony, fatter pay envelopes and better profits have been brought about at a score or more of other plants by Industrial Democracy, the method evolved some ten years ago by John Leitch and now sweeping the industrial world.

This method of running a business is not a beautiful, theoretical idea or ideal, which merely looks well on paper. It is a plan which has been tested and tried in almost every variety of business and in only two isolated instances has it failed to achieve results far beyond the expectations of both workers and employers. It works because it is founded on the square deal, because it deals in man-to-man fashion with workmen, because it gives men and women a genuine voice in governing the conditions under which they work, because it invests workers with a sense of responsibility which is impossible under the ordinary, autocratic way of running a concern by directors and executives without heed to the ideas of the workers themselves.

Industrial Democracy, it is my conviction, after study and investigation, is bringing a genuine solution of the labor problem as it exists in many corporations. Since it has worked with extraordinary success in all kinds of mills and plants and factories during the last ten years and is now hailed by enlightened employers all over the country, there is no manifest reason why it should not be indefinitely extended.

When the strike fever broke out in Passaic the workers in the Passaic Metal Ware Co. felt about as fidgety as those in other plants. The management had no reason to expect that its works would be immune, notwithstanding that it had always sought to treat the workers fairly and to provide them with ideal environment inside and outside the shops. As a matter of fact, murmurs were heard in this plant just as they were being heard in other Passaic plants.

The first thing Mr. Leitch did before he would consent

to introduce his plan was to get together every director and every executive, describe frankly to them what his methods were, explain the difficulties that would have to be overcome before the advantages could be derived, and then satisfy himself that the directors and the chief executives were anxious to do the right thing by their force. Mr. Leitch then proceeded to call a mass meeting of every man and woman and boy in the organization.

He let them know that he came there as one who was sincerely interested in their happiness, as one who had been able to increase the happiness and the wages of many thousands of workers at other plants, and as one who would see to it, if they voted to give him a chance to explain what he proposed, that their lot would be improved—if they, in their turn, were willing to play fair with the management.

The next step was to outline the system of democracy under which it is proposed, if the workers so vote, to assist to run the works. Briefly, Mr. Leitch's individual system is patterned after the form of government of the United States. The chief executive becomes president; the Cabinet consists of the directors and principal officers; the Senate is composed of the other executives; the superintendents, foremen and others having charge of workers; while the House of Representatives, the basis of the whole system, is chosen by the workers themselves, thru secret ballot. The House of Representatives consists wholly of the rank and file of the workers. Each department selects its own representative or representatives, there usually being one representative for every twenty-five or thirty or forty workers.

ADOPTING A POLICY

Mr. Leitch addresses the whole body of the workers somewhat in this fashion: "I think the trouble with this company and with you is that we have no common business policy—a single policy which will be that of the company and of every man in this room. Did you ever think how easily matters would run if both the company and yourselves were working along the same lines, if you were all out for the same thing and willing to work together in the fairest, squarest manner? If we have a policy it should be put down in black and white and hung up on the wall. You can carry copies in your pocket, and you can make it the rule of your conduct in everything.

"I am not going to give you a policy. I am going to ask you to adopt one for yourselves. It will have four cornerstones and a capstone, but I am going to suggest only one a week. We will take one today, talk it over, and then vote on it. If you vote 'Yes' we will lay the second cornerstone a week from today, and then you can vote on that. But if this cornerstone or those which we may talk about on any later day does not suit you I expect you to vote 'No' and we will quit. There is absolutely no use in having a business policy unless everybody agrees to it, and by

everybody I mean not only the president of the company, but also the truck men and the office boys. I suggest, as fundamental, the first cornerstone—Justice."

After explaining that justice must always be two-sided, that justice must be meted out to others before it can be demanded for oneself, and after pointing out that the practice of justice insures a square deal for every one, from office boy or floor sweeper to president, Mr. Leitch offers the following as the first cornerstone of the policy to be adopted:

We, the Employes, Officers and Directors, recognizing that Justice is the greatest good and Injustice the greatest evil, do hereby lay and subscribe to, as the first cornerstone of our policy, this greatest of all good.

The fullest meaning of this word shall be the basis of all our business and personal dealings—among ourselves as individuals, between our company and those of whom we buy, and between our company and those to whom we sell.

Justice shall be the first cornerstone upon which we agree and determine to construct character as individuals and broader commerce as an institution.

We recognize that justice to ourselves necessitates taking advantage of every opportunity to do the best that is in use and each day improve that growing ability.

We realize that merit must be recognized whether in ability or merchandise. With this assurance we cheerfully, hopefully, and courageously press forward to certain and unqualified success.

Usually a week is allowed between meetings, so that the whole idea can have time to sink into the workers' minds. Incidentally, all meetings are held in the company's time, those on regular wages receiving their full pay, while those on piece work are paid what they would have earned during the time consumed by the meeting.

COOPERATION

The second cornerstone laid before the workers is Cooperation, worded thus:

To accomplish the greatest possible results as individuals and as an institution we find Cooperation a necessity.

We recognize that business without Cooperation is like sound without harmony. Therefore we determine and agree to put together and freely offer, and work with, the spirit of that principle—Cooperation.

So we shall grow in Character and Ability and develop individual and Commercial Supremacy:

Differences of opinion shall be freely and fearlessly expressed, but we shall at all times stand ready to Cooperate with and heartily support the final judgment in all matters.

The next cornerstone is Economy, as follows:

As each moment is a full unit in each hour and each hour a full unit in each day, so each well-spent unit of thought and each well-spent unit of action makes for each victory and the final success.

When the hour, the day, the year, or the life is filled with well-spent ability, and an institution is composed of individuals who recognize the value of and so use their time, then success is controlled and governed, and there is no longer vague uncertainty or a blind and unreasoning hope.

Life is like a bag in which, each moment we place a unit of value or of rubbish, and our present and future happiness depends upon the contents of that bag.

Recognizing that Economy is time, material and energy well-spent, we determine to make the best use of them, thus so shall time, material, and energy become our servants while we become the masters of our destiny.

The final cornerstone is Energy:

As energy is the power back of action, and action is necessary to produce results, we determine to Energize our minds

and hands, concentrating all our powers upon the most important work before us.

Thus intensifying our mental and physical activity, we shall "Make two grow where one was," well knowing that our Individual and Commercial Crop of Results will yield in just proportion to our productive and persistent activity.

This power of Energy directed exclusively toward sound and vigorous construction, leaves no room for destruction and reduces all forms of resistance.

SERVICE

By the fifth meeting they are usually ready for this capstone, Service:

We believe that the only sure and sound construction of success as an individual or an institution depends upon the quality and quantity of service rendered.

We neither anticipate nor hope to be unusually favored by fortune, but are thoroly persuaded that fortune favors the performer of worthy deeds and of unusual service, and we therefore determine that our days and our years be occupied with such performance.

Quality shall always be the first element of our service and quantity shall ever be the second consideration.

Thus shall we establish not only the reputation but the character of serving best and serving most.

Therefore, by serving admirably, we shall deserve and receive proportionately.

Mr. Leitch told them that they were going to save money under the new plan—that they were going to get more work done; that it would not be a square deal for the company alone to take the money that they had saved, but instead that they would split up the savings 50-50, that is, as the books of the company showed savings in the cost of operation, the amount saved would be divided into two parts—one would go to the company and the other would be distributed every two weeks to the men as a dividend on wages.

I attended what I think was the third meeting held at the Passaic Metal Ware Works. Whereas less than one month previously the talk was all of strike, there was not a single thought or word of a walkout or trouble of any kind; every worker, male or female, was engrossed in building the new working structure. The proceedings at the House of Representatives session were particularly interesting to me, as the representatives consisted wholly of the rank and file of the workers who had been chosen by their co-workers, men and women, to talk and act for them.

Mr. Leitch, who acted as chairman, asked how things were going.

One representative said that he had spoken to a fellow worker who was not making the best use of his time, but he got slight thanks for his pains. Another representative, a young woman, said that she had had a similar experience.

RUNNING THE GAUNTLET

"Of course, you will encounter difficulties," Mr. Leitch told them. "But your fellow-workers selected you as representatives because they thought that you were the best qualified of the whole bunch for meeting difficulties and straightening them out. This job of being a representative isn't any snap. It is a big honor, but, like most honors, it carries with it responsibilities and difficulties and problems. You have got to prove men enough and women enough to tackle and solve these difficulties and problems. I don't know whether you have courage enough to stand the gaff—but I do think you have.

"You know how the Indians who used to inhabit this very spot on which we are meeting tested the youths who aspired to be received into the warrior class. They stuck a pole into the ground with a long thong hanging from the top, and on

the end of the thong was a hook. The young warriors formed a circle around the pole and then one of the veteran warriors—all the other warriors in the neighborhood were on hand for the ceremony—pulled on the hook until the pole bent over, and then let go. The hook went swishing and slashing in every direction. If one of the candidates as much as batted an eye he was rejected in disgrace. The hook would rip open a chest here, tear out an eye here, slash the cheek of a third—but all the time the young warriors had to stand their ground. Can you stand your ground, can you stand the gaff? As I look at you and size you up, I believe you can."

This straight-from-the-shoulder talk had a favorable effect. I could notice the men square their shoulders. One girl declared that she knew that she was doing the right thing in trying to get some of the other girls to stop wasting time and material and she was willing to swallow their jibes. She knew it would be all right in the end when they understood as clearly as she understood that the waste and the idleness was taking money out of the pockets of everybody in the works.

The force were working on a fifty-two and one-half-hour week schedule. Mr. Leitch explained that the Senate had discussed the feasibility of cutting the hours down to fifty a week without incurring any decrease in production or any lowering of the earnings of those on piece work. Mr. Leitch added that from his experience in other plants he believed that they could lop off the two and one-half hours and not only maintain production, but increase it. It was his strong belief that if everybody was on hand to start work right on the dot, if nobody threw down their tools or quit their machines until the whistle actually blew at lunch time and at closing time, the greater part of the two and one-half hours would be saved by this means alone. He said that while they had had a fifty-two and one-half-hour week, lots of the workers had not given fifty-two and one-half hours' actual service. "Suppose," he added, "we all make up our minds to work—work, mind you—the full fifty hours by being at our place ready to begin work promptly and do not start to wash our hands or clean up until the whistle blows, I am certain the results will astonish most of us."

There was universal support of this suggestion and it was finally voted to put it into operation the following week.

One representative intimated that some of the men were talking of a forty-eight-hour week.

"That's the stuff," Mr. Leitch immediately agreed. "The forty-eight-hour week is what I call the real working week. But as we don't want anybody's pay envelope to suffer a single dollar, don't you think it will be better if we don't try to rush matters all at once? I mean, won't it be wiser for us to go on the fifty-hour schedule next week and then when we have convinced ourselves, as I know we can in a few weeks, that we can do as much work and make as much money in the shorter hours as we did in the longer hours, then we will be ripe for going to forty-eight hours. What does everybody think?"

There was universal support of this view. And the representatives agreed to recommend this course and to explain to the others that the forty-eight-hour week was the definite goal, but that it would not be wise to make too drastic a cut all at once.

NOT "HANDS" BUT "CO-MANAGERS"

Mr. Leitch took occasion to impress upon the workers that in this world one must never expect to get anything for nothing, that in return for shorter hours, in return for their admission to a real part of the running of the business, in

return for their half of the increase in the profits, they would have to give a full return, a full return in the way of loyalty, enthusiasm, economy, greater carefulness in avoiding wastage of material, greater punctuality and a real spirit of teamwork. He told them that, under Industrial Democracy, their status, as they could see, had been indefinitely raised; they were not simply "hands," they were co-managers of the business. Nothing could be done without consulting them or without their consent. Hereafter, altho they had had a part—those of them who were had very much part in the running of their plants. But now all that was changed. They had attained new rights and, as a consequence, new responsibilities. They had grown in stature, so to speak. He knew they would measure up satisfactorily.

The men and women returned to their benches and their machines in such a spirit that, if any labor agitator had dared to suggest a strike at that works, he would have run the danger of being mobbed and mauled.

The Passaic Metal Ware Co. kept going tho thousands upon thousands of workers at other plants were out in rebellion against their employers.

An equally noteworthy experience, revealing how, in another city, every mill but the one that had Industrial Democracy went on strike, will be related in a subsequent issue.

(Copyright B. C. Forbes.)

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Public Works Promotion Halted

The war department has discontinued the promotion of construction of public works. The record shows more than \$450,000,000 under contract.

This is reckoned as a little more than a third of the public work available, but the war department reports that the labor surplus has disappeared and believes that further forcing of public construction would unnecessarily increase the cost of private construction. Therefore the decision to quit.

Capt. James Armstrong, in charge of the district of which Chicago is the headquarters, received his instructions recently.

In the order discontinuing the work is this statement:

"From various sources information received indicates that there has been a general clearing up of the industrial situation, an increase in the amount of general production, a decrease in unemployment, and in fact many localities report a shortage of labor. From the point of view of the war department as well as from a general economic standpoint, the stimulation of public works was one way of overcoming a crisis in the employment market, particularly as regards discharged soldiers."

But the statement says that this crisis seems to be passed and then adds:

"In short, special activity of public works has been regarded as most desirable in a time of stress, furnishing a reservoir to absorb labor in periods of idleness, but if this activity is continued in a time of general commercial activity which is now confronting us, it would have a tendency to shoot up prices and deter private building which after all is the primary public need and the source of production and taxation. Thinking along these lines it now seems advisable to discontinue the stimulation of public works immediately."

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The Brunt Tile & Porcelain Co., Chaseland, Ohio, has increased its capital from \$150,000 to \$500,000.

MULTIPLE STACK KILN SOLVES BURNING PROBLEMS

*Author Who Designed Kiln Illustrated and Discussed
in This Article Tells of Its Unusually Good Merits and
Recommends It for the Burning of High Grade Ware*

By N. Hermes

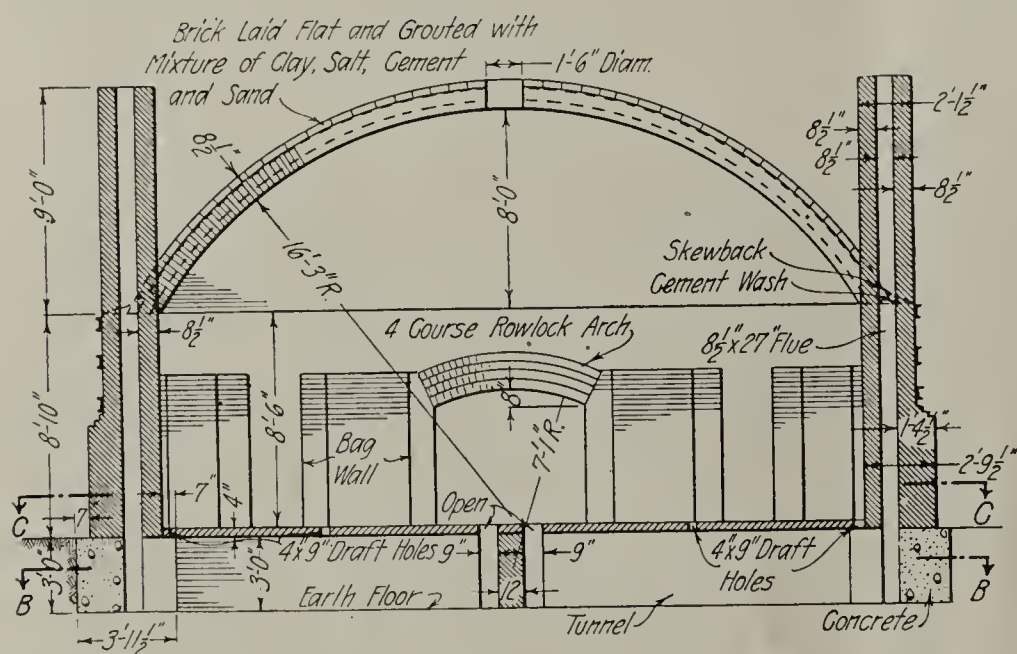
Superintendent, Muskogee (Okla.) Vitrified Brick Co.

THERE ARE A LARGE NUMBER of kilns of different designs on the hundreds of plants using periodic down-drafts but in all of my experience, which includes burning a great many different kinds of kilns, I have never found one

down thru and get away. The partition in the center flue prevents one stack from drawing against the other. This kiln, due to the large center flue and the size of the side tunnels and stacks, will permit the brick to become bone dry in all parts of the kiln at the same time. It will also get hot uniformly thruout the whole instead of heating up merely around the outside and top of the setting first because the water-smoke is pulled away and the heat pulled after it, instead of the heat pushing the watersmoke out of the bottom.

These plans are adaptable to either round or square kilns. In building one of these kilns the size of the side tunnels and stack must not be cut down any, as they must be large enough to carry the watersmoke away. When the kiln becomes hot some of the draft must be shut off; this is done by putting a piece of tin or sheet iron partly over the top of the stacks.

We have burned face brick in this kiln and burned the entire kiln to one shade. This is something I had never seen done before. I have no patent on this kiln and any one is at liberty to build his kilns after this design. Several plants in this part of the country have built them and are going to build some more. The kiln illus-

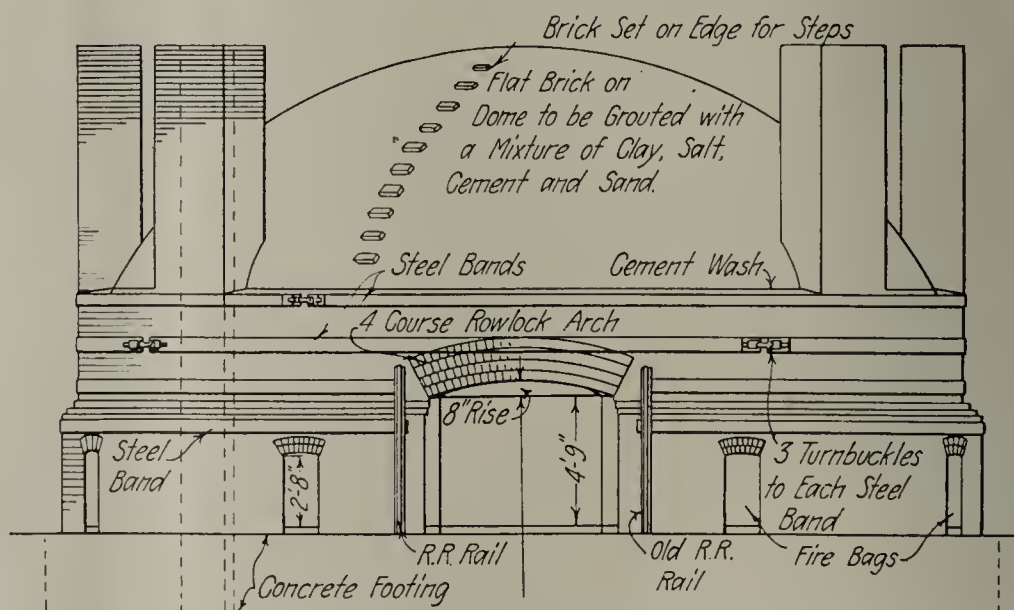


Section Thru Multiple Stack Kiln Along Line A—A Indicated on Plain View.
Construction Details and Specifications Are Given in This Drawing.

that did not have some drawback. Some kilns do not have the proper draft; some have draft enough but it is not evenly distributed and causes the ware to burn unevenly; others take too long a time to burn the ware; with others the upkeep is too expensive; and others again require too much fuel.

An ideal kiln is one that has sufficient draft to take the watersmoke away as fast as it forms and not allow it to accumulate at the bottom of the kiln. The trouble I have found with many kilns is that the tunnels are too small to carry the watersmoke away fast enough, with the result that the moisture is forced to hang in the bottom of the kiln. This holds the lower part of the kiln back in the progress of burning while the top and outside of the kiln is getting hot. It also prolongs the burning time.

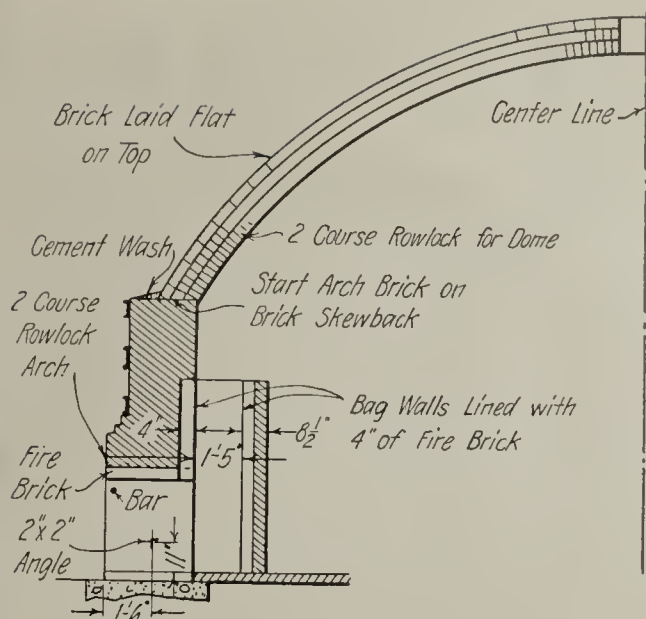
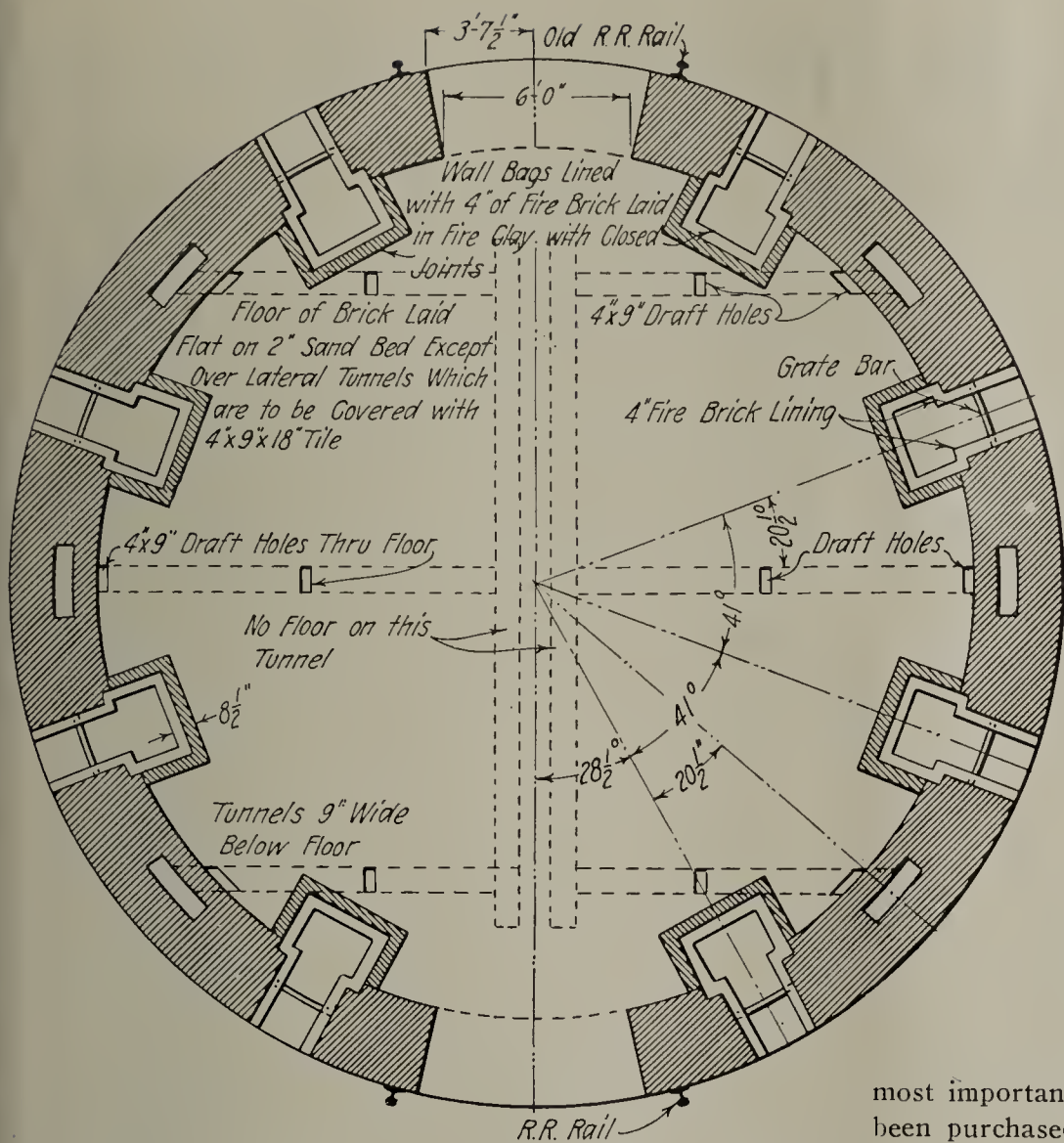
The drawings accompanying this article are plans for a kiln I have designed and built which comes nearer being an ideal kiln than any other I have ever burned. The double tunnels in the center make a long wide opening across the kiln for watersmoke to go



THIS DRAWING IS AN ELEVATION VIEW OF THE KILN FROM WHICH STRUCTURAL
DETAILS MAY BE OBTAINED.

trated is a twenty-eight foot kiln.

I have burned kilns from twenty-six to thirty-six feet in



The Drawing Shown Above is a Section Thru the Fire Bags and Furnaces Showing Their Construction. Slanting Grate Bars Are Used in the Furnaces.

To the Left Is a Floor Plan and Section Along Line C—C. It Will Be Noticed That the Kiln Has Eight Fire Boxes and Six Stacks. All Required Specifications Are Included in the Drawing.

diameter and it is my experience that a twenty-eight foot kiln is the most economical to build, especially where you are burning high grade ware. The upkeep of a larger kiln is greater, it takes longer to burn a larger kiln, and the chances are not near so good that you will get as uniform ware in a larger kiln. So all things considered I prefer a twenty-eight foot kiln. However, should anyone want to build a larger kiln from this drawing they should add more fireboxes. This kiln, or any other kiln, for that matter should be fired light and often, keeping a bright clean fire at all times.

It is hard to get a fireman to fire a kiln as it should be burned, since the general tendency is to load the furnaces up and take a rest. This is a wasteful way to burn coal and a poor way to burn brick. I have seen plants where the fireman had a clock located at the kiln and would load the fire boxes up every hour right on the dot. He would then rest till the next hour came to hand when he would repeat the same thing. All this time the management could not understand why they could not get better burns or why it required so much coal to burn their brick.

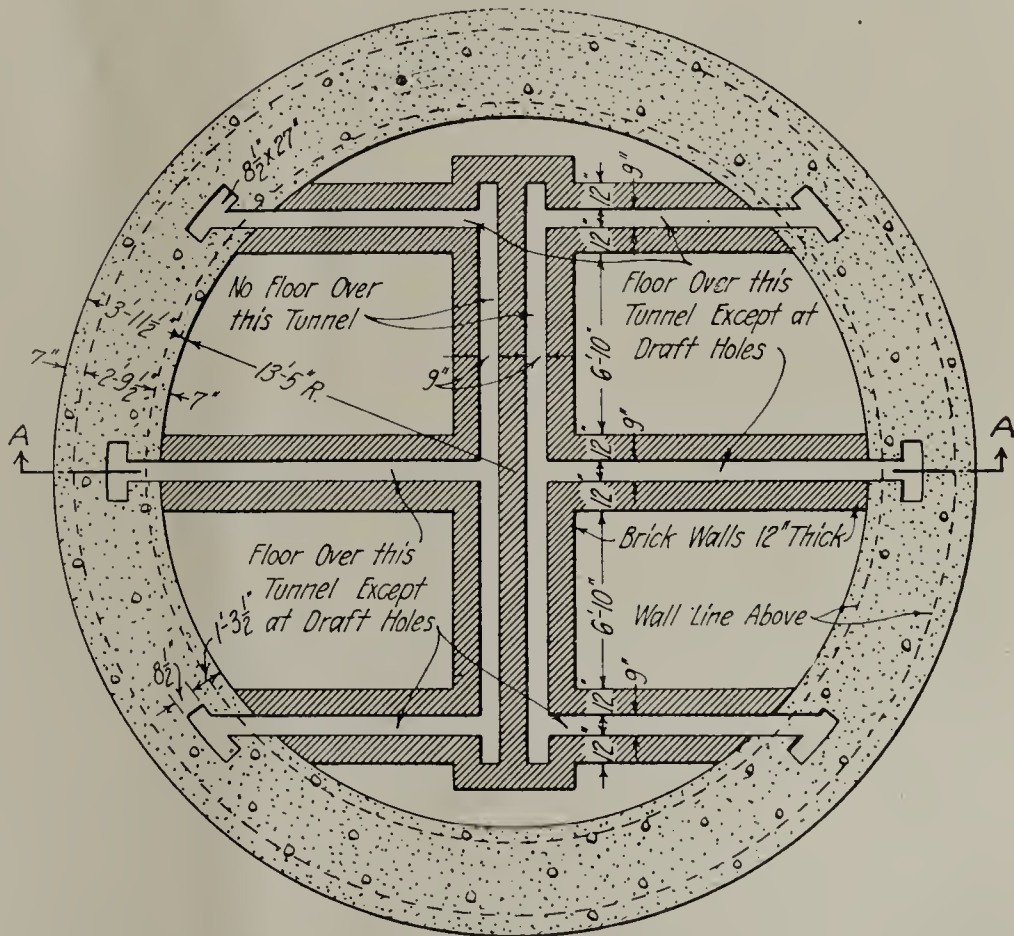
As is noticed, this kiln is a mutiple stack kiln. I have burned dozens of different types of round and rectangular kilns in all parts of the United States and Canada and from my experience I would never build a single stack to a down-draft kiln, after burning this multiple stack kiln.



Syndicate Buys British Brickyards

A syndicate has been formed by some of the largest brick manufacturers of the Nottingham district, and two of the

most important works near Peterborough, Lincolnshire, have been purchased. The syndicate will control at the start an output of between fifty and sixty million brick per annum. One of the yards acquired has specialized in the manufacture of a high-class engineering brick, which has been largely used by the British Admiralty.



The Foundation Plan Taken Along Line B—B Is Portrayed in the Above Drawing Which Completes the Set.

Important developments are expected to follow on the syndicate's acquisition of the two plants above mentioned.

HEARING SCHEDULED *for* COMPLAINT *of* INDUSTRY

*Definite Assurance Given by Interstate Commerce Commission
That Hearing Will Be Arranged for Autumn—Executives of the
Industry Will Appear in Washington in Force to Lend Moral
Support to Representations to Be Made by Their Attorneys—
Plea Will Be Heard By Member of the Commission in Person*

By Waldon Fawcett

GOOD NEWS that has been forthcoming during this past fortnight, goes to show that the brick and building tile industry is moving steadily, as per program, to a show-down in the long-drawn fight for relief from the discriminatory freight rates that are so seriously burdening and hampering the industry. With a forehandedness that is not always shown under such circumstances, the Interstate Commerce Commission has completed, far in advance, all arrangements for the all-important hearing of the petition for a revision of rates which was filed last month on behalf of the "allies" of the brick and tile industry.

Inasmuch as August is "vacation time" in official Washington as elsewhere, the hearing of the brick and tile rate case will not be undertaken until the regular program of the Commerce Commission is resumed in the autumn. This delay is, however, no disappointment to leaders of the industry inasmuch, as they were forewarned when they set out on this "last chance" effort for relief, that the plea could not have the attention it deserves at the hands of the "supreme court of the railroads" until autumn. As a matter of fact the brick and tile interests will not be ready to go to bat until late September or early October for the simple reason that it will be that date before they can marshal all the facts and figures regarding unjustifiable transportation charges with which they expect to back up the request for a marking down of tariffs to the level of other classes of construction material.

For all that the industry will not be ready to lay all its cards on the table until early autumn there is comfort in the definite assurance just given by the Interstate Commerce Commission that a hearing will be arranged for the time mentioned. Fixing of a somewhat approximate date for the hearings is a convenience in that it will enable executives in the industry to so arrange their affairs in advance that they can be in Washington at the time indicated in the event that they desire to be in close contact with the final fight—and "fight" it may be truly denominated because it is a foregone conclusion that the railroad interests will resist vigorously the proposal to slash the revenues that the carriers have been receiving from brick and tile shipments.

Mention of the presence at the hearings of leaders in the various branches of the industry brings up a very interesting question—Are the rank and file of brick and tile men expected to turn out in force to lend, by their presence, moral support to the representations that their attorneys will make at the freight rate tribunal? The answer to this, I am

advised by the men who are directing the rate fight, is that this is a question for answer by each captain in the industry according to his own lights and circumstances. The hearings at Washington will be open or public and brick and tile men will be welcome if their interest prompts them to attend, but it is not anticipated that there will be any real need for a general muster of tradesmen.

While, however, there will be nothing in the nature of a "mass convention" to give weight to the arguments of the spokesmen of the industry it is the plan to summon from trade circles some ten or a dozen executives who will appear in the role of star witnesses for the prosecution. It is the idea to have these witnesses give information at first hand of their own experiences that tend to prove the injustice and inequality of the prevailing freight rates. These witnesses in behalf of the trade will be selected some time in advance, probably upon the recommendation of the officials of the trade associations. It is desired to have the roster of witnesses include one witness from each important territory where brick and tile shipments originate and also to have the selections so made that each class of interests within the industry—say, the paving brick, face brick and common brick contingents, respectively—will have representation.

When it comes to answering leading questions designed to bring out the plight of the industry nothing will be left to chance but all the witnesses will be "primed." In all probability the plan followed will involve the arrangement in advance of the various questions and answers that are desirable to reveal the predicament of brick and tile shippers. However, the brick and tile witnesses will need to come to Washington with all available facts as to their shipments and shipping conditions at their finger tips, for it is too much to expect that each will be allowed to speak his prearranged piece and retire. The attorneys for "the other side" are privileged to cross-examine witnesses, so to speak, and brick and tile men who volunteer or are drafted for this service must be prepared to face lively quizzing.

To answer a question that is already being asked from various quarters in the industry it may be said that the best guess seems to be that it will require about a week to conduct the hearing. Not more than five hours a day will be given over to the proceedings. There will be two sessions continuing from 10 o'clock in the morning until 12:30 and from 2 to 4:30 p. m. Early in the hearing there will be placed in evidence as "exhibits" the statistical tables, graphic charts, etc., wherein will be revealed in the most vivid possible

form the facts summarized from the one thousand reports from individual brick and tile shippers, the mobilization of which was mentioned in the July 15 issue of *Brick and Clay Record*.

PLEA WILL BE HEARD BY MEMBER OF COMMISSION

Not the least gratifying features of the arrangements just completed at the railroad rate tribunal for considering the plea of the brick and tile men is found in the assurance given that this case will be heard by a member of the Commission in person. To the layman this might appear as no more than a detail of administrative routine, but persons who are intimately familiar with conditions governing Governmental regulation of railroad rates will realize that it is highly important that an appeal such as the brick and tile interests are now making should go "straight to headquarters." Indeed, it may be remarked in passing, that it is just because it has been impracticable, under the conditions heretofore existing, for the Interstate Commerce Commissioners to hear in person more than a fraction of the disputes for which they have been asked to act as arbiters that so many railroad rate tangles have not been more satisfactorily disposed of.

Brick and tile men may also congratulate themselves on the assignment of Commissioner Winthrop M. Daniel to hear the complaint of the allied trade associations. Whereas Commissioner Daniel has had no practical experience that could be counted upon to familiarize him with the intimate details of brick and tile distribution he has made a most creditable record on the Commission and has shown that he is possessed of an analytical mind and the judicial temperament so necessary in an umpire for a controversy of this kind. Com-

missioner Daniel is an Ohio man, who, after graduating from Princeton became Professor of Economics at Princeton. Woodrow Wilson, while serving as Governor of New Jersey, appointed him a member of the Public Utilities Commission of New Jersey and when the membership of the Interstate Commerce Commission was increased from seven to nine he was appointed to one of the vacancies thus created.

Engrossed as they are with preparations for the campaign before the Interstate Commerce Commission on which they have staked almost all their hopes of freight rate relief, the leaders of the brick and tile industry who are on guard at Washington have made no move to lay their troubles before Congress in connection with the contemplated legislation to determine the future of the railroads. However, the indications are that nothing will be lost to the industry by this concentration on the Interstate Commerce aspect of the situation, to the exclusion of all else. The facts are that it is unlikely that Congress will take up the railroad issue in earnest before late autumn or early winter. The United States Senate is likely to be engrossed for some time to come with the League of Nations debate and such is the disposition in the House of Representatives to "mark time" that the leaders have considered the advisability of a recess in August. Eventually the brick and other clay products interests are expected to put in their oar, at least to the extent of formally endorsing the Esch-Pomerene bill or similar legislation, but no person in the industry need harbor the suspicion that anything is being lost because the trade bodies are not as active at the Capitol as are the organizations in some other lines that are likewise heavy buyers of railroad transportation.



CERAMISTS *to* COMBINE PLEASURE *with* INSPECTIONS *at* SUMMER OUTING

MEMBERS of the American Ceramic Society will convene at the Iroquois Hotel in Buffalo, on Monday morning, August 4, for the annual summer meeting this year. The trip includes visits to a number of interesting industrial concerns as well as points of scenic beauty. The trip to Niagara Falls and the boat ride from Buffalo to Cleveland on Lake Erie should appeal to everyone; and from all indications this post-war meeting promises to be one of the best meetings ever held by the society.

For Monday afternoon it is planned to take the members thru some of the several interesting industrial plants in Buffalo or the immediate vicinity. The Buffalo committee is endeavoring to arrange a trip thru one of the motor car factories which will interest all those who attend. Dinner will be taken at the Iroquois Hotel Monday evening after which a business meeting of the society, followed by meetings of the professional divisions or local sections will be held.

Chairman A. V. Bleininger, of the Refractories Division of the American Ceramic Society, announces that it is urgent that a full attendance of members of this division be present at the section meeting owing to the fact that several important matters dealing with the future work of the division will be discussed.

TUESDAY TO BE SPENT AT NIAGARA FALLS

Tuesday, August 5, will be spent at Niagara Falls. This trip will include a visit to either one or both of the power houses on the American side and the afternoon will be spent

in viewing the scenic beauties in and around Niagara Falls. In the evening a dinner and round table discussion will be held at the Clifton Hotel on the Canadian side. This hotel is so situated that it overlooks the falls and is an ideal spot to spend a hot summer evening.

On Wednesday the Buffalo Pottery will be visited. This pottery is one of the most up-to-date plants wherein pottery is manufactured, in the United States. The product of this company is principally hotel ware, but is distributed very widely and is in use in foreign countries as well as in our own. From the Buffalo Pottery it is planned to visit the Larkin Co., where a luncheon will be tendered by the management of the concern. After an inspection of this plant, which manufactures all sorts of food products, the members will proceed to the Lackawanna Steel Co.'s plant. In the evening everyone will board the C. & B. boat for Cleveland, arriving in that city the following morning.

CHOICE OF TRIPS TO TAKE

After breakfast at the Hotel Cleveland, inspection trips can be made to any one of several plants in that vicinity as chosen by individual members. These plants include enameling, china and glass works. Choice will be given for the following trips: 1. Enameled Products Co. 2. Vitreous Enameling Co. 3. Cleveland Metal Products Co. 4. Nela Park, Research "University" of the National Electric Lamp Co. 5. National Carbon Co. There may also be an opportunity to visit the Bedford China Co., Bedford, Ohio.

The party will lunch at the Hotel Cleveland and afterwards go to the Cleveland Yacht Club, where a complimentary smoker and dinner will be given by the Northern Ohio Section of the American Ceramic Society. This will end the program for what promises to be one of the most enjoyable and best attended summer meetings of the American Ceramic Society.



Pennsylvania Firm Desires Special Brick

"We are in the market for the following special size brick or terra cotta, to be used for under drain or false bottom in a sprinkling filter for sewage disposal. The brick, if furnished in the form of brick should be within the following dimensions: width, from 1⅞ to 1½ inches; height, from 3¼ to 4 inches; length, from 15 to 17 inches.

"The size most desired if it can be secured is 1¼ inches wide, 3½ inches high and 16 inches long. Either 3⅓ or 4 inches will be desirable for the height of the brick.

"The brick will be laid across a channel which will serve as under drain. The channels from shoulder to shoulder will be 10 inches wide, so that 16-inch brick will have bearing of 3 inches on each ridge.

"The brick will be placed on account of over-lapping ends with space between them, equal to the thickness of a brick, which in the case of a 1¼-inch brick would be 1¼-inch space. This would mean approximately four or five brick standing on edge on each square foot of surface on the average, which would be required to carry a weight of crushed stone placed upon them approximately seven inches thick, so it would not require an excessive amount of strength to carry the load itself. This load would be carried between the brick standing on edge, serving as little beams.

"Can you give us a list of manufacturers who most likely would be in a position to quote on our requirements?"

The above letter was received from a firm near Harrisburg, Pa. *Brick and Clay Record* will be glad to forward the names of any manufacturers who care to quote on the above specifications.



G. C. Mars With A. F. B. A.

G. C. Mars, better known among his friends in the industry as Doctor Mars, who for many years was at the head of the department of service of the Hydraulic-Press Brick Co., St. Louis, Mo., is now located in Chicago as director of advertising for the American Face Brick Association.

At the present time the above association, as an organization, has no material at hand which to use in the big promotional work it has planned to undertake. Drawings, photographs, illustrations, cost figures, etc., have to be gathered and prepared for educational work. Dr. Mars will be in charge of this department, and is organizing for an active campaign as soon as the material can be prepared.



Iowa Society Takes Progressive Steps

The Permanent Buildings Society held its annual meeting at the Chamberlain Hotel, in Des Moines, Iowa, July 16. There was a very satisfactory attendance of members, who showed considerable enthusiasm. At the annual election, C. C. Carhart, of the Sheffield Brick & Tile Co., was elected president and H. F. Moore, of the Hawkeye Clay Works, Fort Dodge, vice-president. C. B. Platt, of Van Meter and Des Moines was chosen to succeed himself as secretary.

Among the important matters discussed by the members was the advisability of choosing a trade-mark to be used

by the clay industry of the state. The Permanent Buildings Society seeks to establish in the minds of the users of clay products that Iowa clays and shales are superior, and that the users are assured of the best of Iowa made goods when they purchase those bearing the trade-mark of the Society. Members present were almost unanimous in favor of the trade-mark idea and it was decided to offer a cash prize for the best trade-mark submitted.

Another important action taken by the meeting was the placing of the financial support of the Society on the basis of tonnage produced by the various member plants. Heretofore the Society has been financed by voluntary donations.



Auditor's Report on Activities of War Service Committee on Brick

Ernst & Ernst, auditors, have completed their examination of the books of account and records of the War Service Committee on Brick, for the period from July 25, 1918 to July 9, 1919 inclusive. Their report contains substantially the following matter.

All cash receipts as shown by the cash receipt book were traced to the bank. All canceled checks returned by the bank to the cash disbursement records were compared, as well as all the supporting data and no exceptions were noted. The accompanying schedules reflect the result of operations for the period mentioned above.

RECEIPTS			
Loan American Face Brick Association.....			\$1,200.00
Dues: Group 1	\$ 380.00		
2	635.00		
3	140.00		
4	270.00		
5	315.00		
6	1,229.25		
7	250.00		
8	275.00		
9			
10	920.00		
11	400.00		
12	685.00		
13			
14	235.00		
15	240.00		
16	690.00		
17	390.00		
18	500.00		
			7,554.25
Assessments on Allocations.....	\$ 5,427.59		
Other Source	5.00		
Special Account No. 1.....	.85		
Refund Insurance Premium.....	1.54		
Refund Committee of Public Information.....	1.45		\$14,190.68

DISBURSEMENTS			
Loan returned	\$ 1,200.00		
Salaries	4,267.85		
Rent	288.00		
Telephone	206.43		
Telegraph	309.57		
Traveling and Incidental Expense.....	184.03		
Supplies	128.01		
Printing	604.45		
Postage	190.00		
Miscellaneous	109.78		
Towel Service	7.15		
Janitor and Ice.....	30.00		
Freight and Drayage.....	264.16		
Legal	5,911.54		
Refunds	40.00		
Audit	40.00		
Paid to Common Brick Manufacturers Association	409.71		\$14,190.68
Balance	\$ 000.00		

The following is a schedule of the cash receipts and disbursements of the General and Freight Rate Funds for the same period.

RECEIPTS			
Group No. 10.....	\$ 968.33		
Group No. 16.....	354.80		
Face Brick Dealers Association of America....	600.00		\$1,923.13
DISBURSEMENTS			
Attorney Fees	\$ 1,922.28		
War Service Committee on Brick to close a/c .....	.85		\$1,923.13
Balance	\$ 000.00		

PROPHETS *and* PROFITS

Some Phases of Cost Finding Which Are in Accord With the Most Progressive Methods Advocated by Leading Writers on the Subject

By G. W. Greenwood

Treasurer, United Refractories Co., Uniontown, Pa.

THE GENERAL MANAGER was sitting tilted back in his chair, a deep furrow between his eyes as he leafed thru the pages of a file of reports.

"Mr. Barnes," he said, as the auditor entered, "these reports have me guessing. Now for most of the plants these costs for last month appear to be in line, but those for the Bennett plant," tapping with his pencil a page of the reports, "strike me as being extremely high."

"I'm very sorry," said Barnes with an expression of pleasure on his face which belied his words, since he dearly loved a discussion of this character. "The Bennett plant ran only one-half a month. When production goes down, costs go up, like a see-saw."

"Well I must confess there are many things in these documents I neither see nor saw. Now I don't pretend to know anything about accounting. But am I to understand that you have here charged up, against a half month's run, a full month's depreciation, salaries, taxes, insurance, and dear knows what?"

"I'm afraid that is true," admitted Barnes, taking a seat at the other side of the wide flat topped desk and preparing to enjoy himself.

"Well all I can say is that it may be good accounting to divide a full month's costs by half a month's output, but I can't see that it gets us anywhere. For instance, selling prices are supposed to be based on costs. Can Mr. Baldwin sell the output of the Bennett plant at the figures you show here?"

"If he can, he's a wonder," grinned Barnes.

"Then he must disregard the figures for last month. Shall he use only figures based on full month's runs? If he uses only costs which are most favorable, where do we all land?"

USES PERVERSE COURSE TO EMPHASIZE IDEAS

Barnes fully realized the fallacy of his position, but he had for a long time some radical ideas of his own on the subject of costs, and he promptly concluded that he could best emphasize them by a perverse course.

"Which would you prefer; to have Mr. Baldwin ignore abnormal costs, or have me include only a half a month's fixed charges when a plant runs but half a month? What would I do with the remaining half, in such a case? They are certainly part of the cost, and must assuredly find their way into the costs in some form or other. You can't repudiate payment of fixed charges, whether plants run or stand idle."

"In other words, you do not feel like the legislator in one of our states who introduced a bill that the distance around a circle must in all cases be exactly three times the diameter," suggested the G. M. jocularly.

"Such a method would simplify all calculations where a circle is involved, from elementary geometry to advanced calculus," conceded Barnes. "But I would fear for the navigator who for simplicity assumed that it was only three

times as far around the earth as it is thru it. And in the same way, any brick company which assumed for simplicity that figures based on full running schedules represented true costs, would likewise land in a sea of doubt. Now just how do you think costs should be disposed of when a plant is closed down?" he concluded, getting out his knife and rummaging around in his pockets.

"I have said it once; I say it again; if I say it three times, it is true, as Lewis Carroll says in *The Hunting of the Snark* or words to that effect. So again I say, I know nothing about the collecting and tabulating of cost data. But I do have a sneaking feeling that to be of any service at all it should be possible to say, 'This brand costs so and so, and we can afford to sell it for so much.'"

"That would be an ideal situation," said Barnes, having abstracted a stub of pencil from some recess of his pockets.

"Now take this mysterious item of depreciation, for example. Do you take it for a year and divide it into twelve equal monthly installments?"

Barnes nodded.

"Then how about this?" was the G. M.'s triumphant response. "Suppose in a certain year, not a leap year, the month of February contains four Sundays—"

"It always does," affirmed Barnes, with accustomed accuracy.

"—and suppose the following month has but four Sundays. Then, if no time is lost in either month, you have a full month's depreciation charged against twenty-four days in one case, and the same identical charge against twenty-



Mr. Wheeler (on the Right) Acted as Pilot for G. W. Greenwood (on the Left) on a Spin Thru the Air at Atlantic City Recently. The Manager of the Seashore Flying Corp., J. L. Kaufman, Was at One Time in the Brick Business.

seven days the next month. Is this the way it works?"

"The same applies to taxes, interest, obsolescence, fire insurance, and other fixed charges of a similar character," said Barnes, excavating a series of communicating trenches around the pencil.

"Then even on a full time basis, your method looks to me to be unfair. But suppose again that in one month more kilns are filled than are fired, and that these extra kilns are burned off the following month. In the first case, the burning cost is unfairly low, in the other unfairly high."

"I'm afraid that's what happens," said Barnes, continuing his defenses.

WHAT IS LOGICAL BASIS FOR FINDING COSTS?

"Then it looks to me as tho the contents of the kilns fired each month would be as logical a basis for finding costs as is the amount made."

"One might take the average of the amounts made, fired, and removed from kilns each month as a basis," added Barnes, smilingly.

"Now here is the Cayley plant, which closed the first day of the month," continued the G. M., turning to another file. "I do not see any cost per thousand based on this one day's run."

Barnes nodded.

"So even you did not have the courage to saddle one day's run with a full month's fixed charges. What are you going to do with the costs assessed against this plant? Add them in with those for the present month, when the probability is that it will not run at all?"

"I plead guilty," confessed Barnes, cutting away with increased vehemence. "All you say is true. Only you do not go nearly far enough. All charges must indeed be included in the costs, but to regard each month's charges as a separate unit is both unfair and misleading. A half month's run should not bear the entire burden of a half month's idleness, while a full month's run, more capable of bearing the extra cost, goes free. One set of figures is just as misleading as the other. Difficult shapes might be made during a full month's run, and only standard nine-inch series during part of another month, resulting apparently in lower costs for the more difficult special shapes. Such costs remind me of the story of the man who was sick. When asked if her husband was conscious, his wife replied, 'Yes, thank goodness, he's conscious all right, but he doesn't know anything.'"

"My fix exactly," said the G. M.

"Under normal conditions, brick made during February should not show higher costs than those made in either January or March. In case of a bad burn, the excess burning cost should not be borne entirely and solely by the material which happened to have been set in that particular kiln."

"Sounds reasonable," assented the G. M.

"When work is plenty, we urge the men not to spend all they earn, but to lay some aside for a rainy day. And to carry health and life insurance to cushion shocks. Just so, a full day's run should lay by for an off day, when the plant, like a man, is out of work."

"Like setting up a reserve for bad accounts," suggested the G. M.

"Same thing. And this means setting up standards. If one contracts for his coal and raw material, the price he pays should cover costs incurred by the contractor when he is closed down. The price paid is that for which it must be produced, including shut-downs, and still show a profit. So every plant should set a standard at which it should buy its coal and raw material from its own mines and quarries. The solution to the whole cost system lies in the establishment of various standards, with records showing to what extent they are being met. The cost per hour for every operation, the output per hour for every machine, the nine-inch equivalent for every kiln, the time of burning, and so on, to serve as yard sticks for the measuring of costs and output. Just as one measures a shape and compares the dimensions thereof with the corresponding figures on a blue print."

"If the yard stick you propose is to be used in measuring the performances of a brick yard, it should be a brick-yard stick," commented the G. M. "But go on, Mr. Barnes, you are getting me interested."

SHOULD HAVE SCHEDULES OF COST TO WORK WITH

"Then take this as an illustration: Suppose one were to go into a ticket office in Chicago and ask when a train leaving at a certain time could be expected to arrive at New York. And suppose the agent were to say, 'Indeed I don't know. We do not make up a summary of this month's trains until about the twentieth of next month. But last month the average time taken by passenger trains of all classes was twenty-five hours, the month before thirty hours, and the average for this month will probably lie between these two.' Instead, each train has a definite schedule which it is expected to maintain. Suppose we are on a train which makes a run of two hundred miles or more before coming to a stop. As it pulls into the station, we look at our watches and find if we are on time. Between the two points we have no means of knowing definitely what progress we may be making. But the time tables in the hands of the engineer and the conductor are quite different from those in the hands of the passenger. They show the time at which the train is expected to pass every little way station, and the trainmen know at every stage just how they are stacking up. So the cost accountant should be able to forecast costs for every class of product, with schedules of costs for each element of it, so that one may know each day what progress is being made. He should be more of a prophet than a historian."

"But in the face of these remarks, Mr. Barnes," picking up the reports of the past month's operations, "why have you not been working along the lines you advocate instead of using your energies to less purpose in getting up such documents as these?"

"Because it will be necessary to interest superintendents, and foremen, as well as yourself, in the establishment of proper definite standards, and to enlist the cooperation of you all in maintaining them. And so long as you were satisfied with the reports you were getting, reforms were hopeless. The case was similar, if you will pardon the comparison, to that in which your predecessor was perfectly satisfied to have the total nine-inch equivalent of the brick sold divided into the net amount of the sales, so as to get the average selling price per thousand."

"In that case, you certainly have attained your desire. I'm about as satisfied now with these old styles reports as I would be with a last century's model automobile."

* * *

Better Homes Contest On in Kansas City

The Kansas City "Star," recently began a contest for better homes, by offering prizes of cash for the best homes in Kansas City, divided into three classes according to the value of the residence itself, or rather its cost. A committee of widely known real estate men and builders has been named to select the winners in the contest. The contest is the outgrowth of a recent editorial feature of the newspaper, which published statements lauding the fame of the city such as: "Do you know that Kansas City is the largest hay market in the world?" It happened that the editorial writer published the statement, "Do you know that the beauty of Kansas City's residential sections is unsurpassed by any other city?" This statement gave birth to the unique contest which fits well with the annual spring "Build Now" campaign. The classification of the prizes has been agreed upon as follows:

For houses costing less than \$7,500: first prize, \$100.00, second prize \$60.00, third prize \$40.00.

For houses costing more than \$7,000 and less than \$15,000: first prize \$100.00, second prize \$60.00, third prize \$40.00.

For houses costing more than \$15,000: first prize \$100.00, second prize \$60.00, third prize \$40.00.

The writer recently discussed the contest of beautiful homes with several brick companies' representatives and one of the most widely known real estate men in the city, and the real estate man declared that it was his belief that at least six houses of brick construction in Kansas City would be among the nine winners. The brick representatives were not so confident as the real estate man. The contest will not close until October and the awards will be made in November.

The contest is not limited save that the prizes must be awarded directly to the owner of the home. In deciding the results the judges will base the awards upon the following:

The house will count two-thirds and the grounds one-third. The house will be ranked according to general conveniences as well as beauty and the plan, as well as exterior and interior attractiveness, will be considered. The consideration of the grounds will include outbuildings, garage, shrubbery, walks, drives, etc. Due credit will be given to shrubbery and trees planted according to a plan, but not yet matured.

It is also necessary that the general plan of the house be given and that all building materials used in the construction be specified.



The UNUSUAL in BRICK CHIMNEYS

ACCOMPLISHMENTS with brick are always interesting. And the greater the accomplishments, the greater the deserved attention, because the execution and results carry a significance of just what can be done with this enduring



Detail of Typical Chimney on the Pratt Residence.

burned clay product. There is seemingly no end of possibilities, whether for simple and plain durability, architectural beauty and effect, or distinctive and unusual attainments. Brick will do it—it can be done with brick.

A highly interesting piece of work has been executed by the Hay-Walker Brick Co., New York, in connection with the construction of the chimneys on the residence of Herbert L. Pratt, Glen Cove, Long Island, N. Y. A front view of this handsome home, and from which the chimneys will be noted, is shown in the accompanying illustration; this structure was designed by James Brite, architect, New York, and erected by Charles T. Wills, Inc., building contractor of the same city.

The construction included a total of thirty chimneys, of general type as set forth in the close-up illustration here reproduced. This latter picture indicates in a comprehensive

way the plain but elegant design, with artistic cap formed in rounded octagonal shape, blending harmoniously with the chimney proper, also of octagonal pattern.

These chimneys were built of hand molded brick, in conjunction with the use of regular Harvard brick, these being red in color, running into a blue edge brick with red center, the entire harmonizing with the brick used for the entire building, as well as the terrace wall and other exterior features; the trim is of limestone. The construction of these chimneys and the execution of the entire job follows closely the work of this company in connection with the chimneys on the residence of Mrs. H. J. Topping, described in *Brick and Clay Record*, issue April 22, 1919.

The chimneys on the Pratt home were erected in groups of two, three and six, as will be noted; a more detail view of one of the last mentioned groups is shown in the accompanying illustration. The chimneys average about 15 inches in diameter; the brick are laid 29 courses high above the top of the base cap. The chimneys add to the elegance of the residence, which is one of the most attractive and imposing in this section, and where funds are available for such character of added adornment, the expense is well worth while.



Kansas City Active in Brick Pavements

The Western Paving Brick Manufacturers' Association held its monthly conference of directors at the secretary's



Front View of Herbert L. Pratt Residence, Glen Cove, Long Island.

office at Kansas City, Saturday, June 21. The association has extended until now it embraces six states, Iowa, Nebraska, Missouri, Kansas, Oklahoma and Texas.



Detail of Group of Six Chimneys on Glen Cove Residence, Showing Elegance and Simplicity of Design.

It was stated by Clark R. Mandigo, consulting engineer for the association that all the plants were now working close to capacity and that this season contracts had already been let in this territory for more than two million yards of brick paving. This season is going to be one of the largest that the paving brick manufacturers have had. The contracts for brick paving in Kansas City alone have already more than doubled those of last year and two years ago. Contracts for more than 150,000 yards of brick paving have been let by the city and it is thought that large contracts will soon be let for the paving with brick of two of the main thoroughfares of the city, the McGee Street Traffic Way and Grand Avenue. The repaving of these two heavy traveled streets is now in the city council, where it is being decided whether or not to pave the two big traffic arteries with brick or other materials.



Prospects in the Construction Industry

The National Federation of Construction Industries has just completed a survey of business conditions and prospects in the construction industry, which confirms the fact that during the past few weeks general business conditions have greatly improved and that the prospects for the future are bright. An analysis of the answers to a questionnaire sent to 1,400 of the leading construction industries and related interests in the United States shows that a preponderance of opinion supports the view that the present price level is here to stay for an indefinite period of time, and many believe that prices will go still higher.



Paving Brick Interests Back Movement for Better Mail Roads

All paving material interests of Ohio, and particularly paving brick manufacturers, are enthusiastically endorsing the movement, and lending it their support, that has resulted in the uniting of the activities of the Automobile and Motor Manufacturers' Association and the Automobile Accessories Association in the Highway Industries Association. They see in the movement under these divisions a real nation-

wide movement for the improvement of the roads of the country. The associations named are preparing to back the movement for the formation of a Federal Highway Council. The chief function of this council will be to urge upon Congress the immediate passage of the Townsend Bill.

The Townsend Bill is now pending in Congress. If passed, it will create a national highway commission that will lay out and build a system of national highways at Government expense. This will be distinct from the aid already given by the federal government to states and counties in the way of appropriations for road building.

At present the work is carried on thru the Bureau of Public Roads of the Department of Agriculture. The aim of the present movement thru the bill pending is to put the work into the hands of a commission which will be able to coordinate and centralize all Federal road building activity. This will mean that the government will designate certain roads which it intends to take over outright, to build and maintain. The scope will be interstate. This does not mean, however, that the government will not continue to aid state and county road building projects as it has been doing in the past.

Ohio commercial, industrial and business interests, as well as the big farming communities of the Buckeye state, are particularly interested in the movement, for they see in it relief from alleged intolerable conditions as regards the movement of mails thru the rural districts of different parts of Ohio. For example, a survey recently conducted by Post Office Inspector George Pate, of Youngstown, shows that many miles of roads in Trumbull County are impassable, and that in order to facilitate rural mail delivery, many of these roads will be abandoned and the routes leading out of Warren, Ohio, changed. This will mean sweeping alterations in present routes.

"This is an angle the National Paving Brick Manufacturers Association has been working on with other interests for a long time," says Maurice B. Greenough, secretary of the association. "This rerouting of mail routes may be considered a step toward the better road movement being advocated broadcast. Indecent and impassable roads are to be deplored, and especially in regard to rural free delivery mail service. In many parts of the country roads for hundreds of miles are yearly rendered impassable by mud during the spring and fall seasons. It is not an uncommon sight to see an accumulation of from ten to thirty mail boxes at cross roads, a sign that one of the roads is impassable for a distance of from three to five miles. It also means that the farmer must make a daily trip for his mail to this point, and that rural free delivery is more of a theory than fact with him. It is to remedy conditions such as this, to pro-



Good Roads Would Improve These Conditions.

vide good roads for the motorist, to enable the farmer to get his produce to market quickly, that the determined effort now is being made to pass the Townsend Bill."

WHAT ECONOMIZERS ARE *and* HOW USED

Containing Some Instructive Information on the Use of This Equipment in the Boiler Plant and Including Some Advice Concerning Its Installation

By Robert June, M. E.

OF ALL NECESSARY EQUIPMENT in the boiler room, the economizer has the oldest history, and in many ways the most secure position. It was in 1845 that Edward Green developed economizer design and construction to a point of practical utility, and the apparatus has been in more or less general use ever since. Curiously enough, America, with her apparently insatiable demands for industrial efficiency, has never adopted the economizer to anything like the extent which Europe has, nor has she accorded it, when adopted, the degree of appreciation and recognition to which it is entitled on merit.

For the economizer does possess merit, in many ways which we shall discuss, sufficient to recommend it to thousands of power plant operators, whose boiler rooms are not now equipped. But before taking up the question of what the economizer does, let us see what it is.

Economizers are of two types: Integral—directly connected with the boiler; Independent—not directly connected with the boiler.

Figure I is a good example of the integral type. The installation, which is to be found at the plant of the Kansas City Light & Power Co., consists of six h. p. B. & W. boilers, with economizers, built of standard drums and tubes of Sterling boilers, super-imposed. The use of Sterling boiler sections saved time in delivery, reduced cost, and at the same time satisfied the requirements imposed by the operating pressure, which was 300 lbs.

Figures II and III (courtesy of Professor Gebhart), illustrate the independent type, as exemplified by the Green economizer. The Sturtevant economizer, while differing in some details of design and construction, is of the same general type, and need not be separately described, it being understood that superior merit is not here assigned to either equipment, with reference to the other.

WHAT AN ECONOMIZER IS

The independent economizer then consists of a series of rows of cast iron tubes arranged vertically, in sections. The tubes are usually 9 to 10 feet high, and $4\frac{5}{8}$ inch in diameter. Sections, of decreasing width, are arranged across the main flue between the boiler and the stack, so that the gases of combustion must pass thru the spaces between the tubes on their way to the atmosphere. A by-pass is provided for use when the economizer is down for cleaning or repairs, so that boiler operation need not be interfered with.

Top and bottom headers connect the various rows of tubes, and the headers are themselves connected to upper and lower branch pipes. Feed water, on the way to the boiler, is forced thru the various sections of pipe, beginning near the stack at the point of lowest temperature, and leaving

the entrance to the economizer, at the point of highest temperature.

Without the economizer, the lowest limit to which the temperature of the flue gases leaving the boiler may be reduced, is of course the temperature of the steam, which is dependent upon the pressure, as shown in the following table:

Absolute Pressure lbs. per sq. in.	Temperature Degree Fahr.	Absolute Pressure	Temperature Degree Fahr.	Absolute Pressure	Temperature Degree Fahr.
100	327.6	190	377.4	260	404.4
110	334.5	200	381.7	270	407.8
120	341.0	210	385.8	280	411.8
130	347.1	220	389.8	290	414.3
140	352.8	230	393.6	300	417.4
150	358.2			325	424.8
160	3.63.4	240	397.3	350	431.8
170	368.3	250	400.9		
180	372.9				

The economizer takes in feed water at a temperature ranging from 50 deg. Fahr. to 200 deg. Fahr., and delivers it to the boiler, anywhere from 100 to 150 degrees hotter, utilizing the heat of the flue gases which would otherwise be dispersed up the stack to the atmosphere. Off-hand, this looks like an opportunity to effect economies in operation well worth going after.

With the economizer, the lowest practicable limit is that of the dew point of the exit gases. Under average conditions of boiler operations, only about 85 per cent, of the possible reduction between initial furnace and outlet gas temperatures can possibly be obtained. To obtain 95 per cent., it has been calculated that the boiler heating surface would have to be increased by 60 per cent. The impracticability of

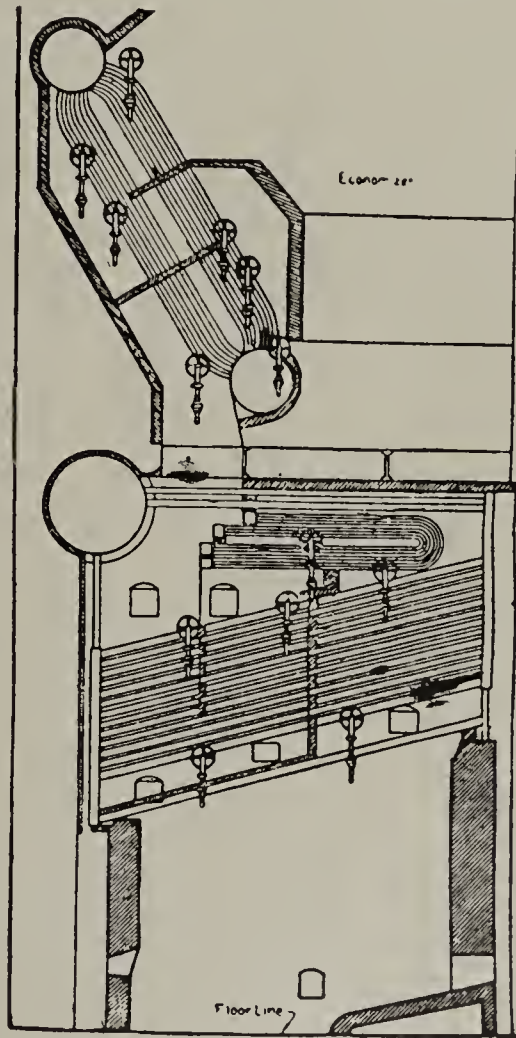


Fig. 1. Integral Type Economizer Equipped With Mechanical Soot Blowers.

any attempt to gain economy in this manner is evident by a glance at the conditions of combustion.

When the combustion gases first come in contact with the surfaces of the boiler, the transfer of heat is very rapid, due to the great difference in temperature, but as the gases in their progress become cooler, the rate of transfer de-

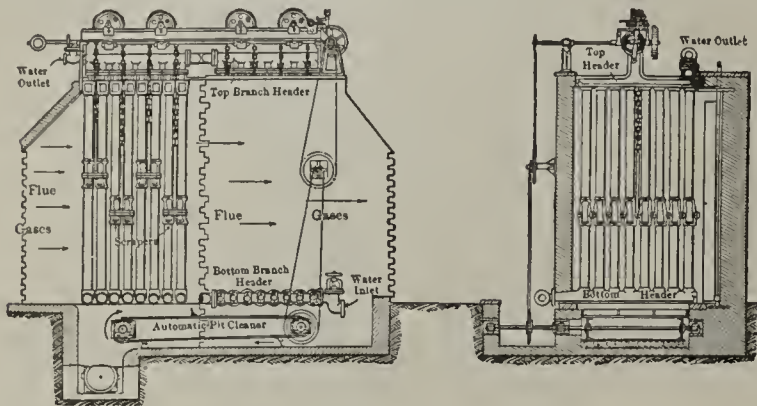


Fig. 2. Showing a Cross Section of the Independent Type of Economizer.

clines proportionately. If carried far enough a point is reached where the amount of heat transferred per square foot of boiler surface is not sufficient to pay interest, maintenance, and operating charges upon the surface involved. The calculation to obtain the minimum point is somewhat involved and need not be entered into here, it being sufficient to note that with coal at \$3.00 per ton, it ranges from 100 degrees difference between steam temperature and flue gas temperature if boilers are operated 24 hours a day, 365 days a year, to 250 degrees difference if boilers are operated 10 hours a day, 300 days a year. We may assume 150 to 200 degrees difference as the minimum in the average case. This means, finally, that our economical overall boiler efficiency is strictly limited, unless we can find some cheaper means—such as afforded by the economizer—of transferring the heat to the water.

To take an example from actual practice, let us assume that a boiler operating at 180 lbs. pressure has been provided with sufficient heating surface, as is often the case, to reduce flue gas temperatures to 560 deg. Fahr. Assume water to enter the economizer at 90 deg. Fahr., that the temperature of exit gases from economizer is 350 deg. Fahr. and water to be heated 150 deg. Fahr. We then have average temper-

$$\frac{560 + 350}{2}$$

ature of gases in the economizer = 455 deg., and

$$\frac{90 + 240}{2}$$

of the water = 165, giving an average difference

in temperature of water and gases of 290 degrees. This is 1.6 times as great as the difference in temperature between the gases in the last pass of the boiler, and the steam. Hence it follows that the economizer surface as a whole will recover 1.6 times as much heat per square foot as will the last square foot of boiler surface.

ADVANTAGES AND DISADVANTAGES OF ECONOMIZER

We may tabulate the advantages and disadvantages of the economizer as follows:

1. Fuel—a saving of 5 to 15 per cent.
2. Overall efficiency—a substantial gain where the boilers are forced and mechanical draft is employed. Highest possible gain when boilers are driven 200 per cent. or more above rating, using mechanical draft, and with electrically driven auxiliaries precluding a supply of exhaust steam being available for feed water heating.
3. Decreased strain on boilers, due to higher entering temperature of feed water.
4. Increased flexibility—large storage of hot water makes it easier to handle sudden peak loads.

Disadvantages of economizers are:

1. Initial cost is comparatively high, being in the neighborhood of \$12.00 per boiler h. p.
2. Maintenance—comparatively high repair costs due to soot scraper replacements. (This can be eliminated by use of mechanical soot blowers in place of scrapers).
3. Overall efficiency—an actual loss where installation is made in connection with light chimney draft and boilers operating below normal rating.
4. Space Required—the equipment is bulky, taking up considerable space. On new installations, a larger boiler room than otherwise required must be provided; in old boiler rooms, installation can often only be made at considerable expense for alterations.

WHAT TO CONSIDER BEFORE INSTALLING

Points to be taken into account when considering the installation of an economizer, are as follows:

- A. Flue gas temperature—The higher the temperature the greater the economy.
- B. Boiler pressure—if 250 lbs. or over, economizers are indispensable.
- C. Boiler rating—the greater the load on the boiler the more necessary the economizer.
- D. Initial feed water temperature—in some cases an economizer is desirable even with initial temperatures of 200 deg. Fahr.
- E. Exhaust steam—if the use of electrically driven auxiliaries eliminates exhaust steam as a possibility for heating feed water, an economizer is desirable.
- F. Purity of feed water—with impure feed water the formation of scale inside the economizer tubes may seriously affect the efficiency of heat transmission.
- G. Cost of producing draft—if a chimney draft is depended upon, an extra height of stack, costing from 20 to 40 per cent. will be required. With mechanical draft power required ranges from one to four per cent. of main generator output.
- H. Extra cost for high pressures—cost of installation increases rapidly above 250 lbs. pressure, on account of extra heavy materials required.

Some of the factors entering into successful and economical economizer operation will next be noted.

GAS TEMPERATURES

It is important to know the temperature of the gases entering and leaving the economizer. Either a mercury thermometer or an electric pyrometer will answer the purpose. A recording instrument is preferable, since a permanent record is made to which reference may be made at any time. By means of this record, the losses caused by

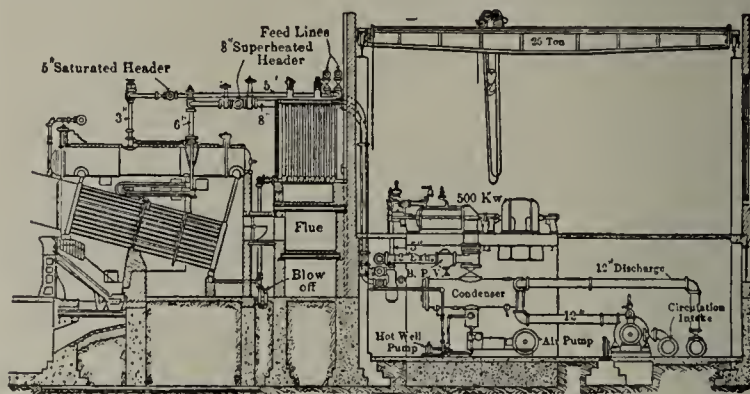


Fig. 3. Location of an Independent Economizer in a Typical Power Station.

air infiltration and dirty tubes may be determined at any time.

In inserting the pyrometer tube, locations at the entrance and exit points of the gases should be carefully chosen. Do

not place the tube behind the damper or anywhere else where there is likely to be a pocket of dead gas. Choose a point in the middle of the flue, and be sure that the hole thru which the instrument is inserted is sealed tightly about it, so that there will be no air infiltration at this point, with consequent error in records, as well as loss in efficiency.

WATER TEMPERATURES

Mercury thermometers placed in the inlet and outlet pipes will show the water temperatures. Recording thermometers are preferable for this service, both from the standpoint of accuracy and efficiency of operation.

The function of the economizer is to heat the feed water, and without continuous temperature readings the operator in charge has no idea how well results are being secured. It is not desirable from a mechanical standpoint to operate an economizer under conditions such as would cause steam to form in the economizer itself, yet this condition might arise with either a slight increase in the temperature, or an increase in the weight of the waste gases passing thru the apparatus.

Due to the peculiar construction of heaters, dampers, section walls, etc., the economizer offers many opportunities for air infiltration. Frequent checks should on this account, be made of the entrance and exit temperatures, of both gas and water, and frequent analysis should be made of the CO_2 in the entrance and exit gases. A drop of 1 to 2 per cent. in the CO_2 thru the economizer may reasonably be expected, but where the drop exceeds this amount, something is wrong and rigid investigation should be made.

In searching for air leaks, use a torch or candle, paying particular attention to cleaning doors, damper shafts, and the walls of the gas flue between the economizer and the boiler. Do not take it for granted that low exit gas temperatures mean efficient economizer operation. Constant check, particularly of CO_2 is your only safeguard.

HOW SHALL THE ECONOMIZER BE CLEANED?

This question, until a few years ago, was always answered in one way, as far at least as the independent type of economizer was concerned. The answer given was "by scrapers." This answer is no longer always given, but before considering the alternative, let us examine "scraper" construction.

Due perhaps to lowered temperatures and slower movement of the gas there is a great tendency toward soot deposit on economizer tubes. As soot is the best preventative of heat transference known, being several times more effective than asbestos in this respect, it must be removed. In scraper construction, each tube is encircled with a set of triple overlapping scrapers which travel continuously up and down the tubes at a slow rate of speed. The apparatus for working the scrapers is placed on top of the economizer, outside the chamber, and the motive power is supplied either by a belt from some convenient shaft or small independent engine or motor. Power required for operating the gearing is approximately one h. p. per 1000 square feet of economizer surface.

Now, there are three important disadvantages to the use of scrapers which have led engineers to look elsewhere for a solution of the soot problem in economizers.

These disadvantages are: (a) Heavy initial cost of scraper mechanisms. (b) Constant repairs required due to wearing out of scrapers and other moving parts. (c) Cost of continuous power to move scrapers.

In addition to these disadvantages, the scraper construction does not permit a thoro cleaning of the tubes. The scrapers embrace two tubes, and clearance is required, consequently there is a certain thickness of soot accumulation which is never scraped off the tubes. Investigations have

proved that the scrapers frequently glaze this accumulation into a hard enamel-like scale that can only be removed by tapping.

MECHANICAL SOOT BLOWER RECOMMENDED

As an alternative to the scraper, engineers have been turning in increased numbers to the standard cross-element, revolving type of mechanical soot blower. As far as the

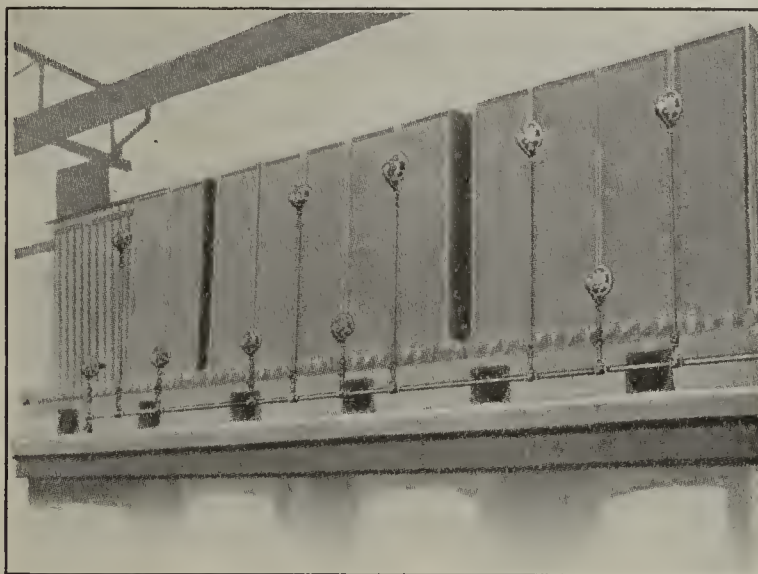


Fig. 4. Independent Type of Economizer Equipped With Soot Blowers.

integral type of economizer is concerned, the mechanical soot blower has been the only type of cleaning device considered.

Figure I, which shows the integral type of economizer at the Kansas City Light & Power Co. illustrates the application of Diamond soot blowers for cleaning purposes. Each economizer has six soot blower units, with 19 nozzles each, on each side. Six minutes actual blowing time is required to blow the soot from the economizer, and the steam consumption is about 2,600 pounds of steam.

Figure IV shows the adaption of mechanical soot blowers to the independent type of economizer. With revolving units permanently installed between the tubes and regularly used several times each day, the heat-resisting soot is given no opportunity to collect. The tubes are kept perfectly smooth and clean at all times and consequently the general efficiency of the economizer is very greatly improved.

Where new installations are being considered, it should be remembered that mechanical soot blowers can be installed at the outset, thus entirely eliminating the cost of scrapers. Furthermore, it is possible to plan on the use of horizontal tubes in the economizer, thus permitting the installation of baffles to hold gases in control with tubes for a greater length of time.

The Solvay Process Co. reports the following results of a test made to determine the actual comparative value of mechanical soot blowers and scrapers, installed on their economizers:

	Entrance gas temperatures	Exit gas temperatures	Difference
With scrapers	437 deg. Fahr.	383 deg. Fahr.	54 deg. Fahr.
With mechanical soot blowers	437 deg. Fahr.	320 deg. Fahr.	117 deg. Fahr.

This test fairly indicates the very marked advantage of mechanical soot blowers over scrapers, and it is to be anticipated that economizer practice of the future will tend more and more toward the use of mechanical soot blowers.



Paving Brick Interests to Meet August 11

Meeting of the advisory committee of the National Paving Brick Manufacturers' Association will be held at the Colum-

bus, Ohio, Athletic Club, August 11. Members who plan to attend will include W. C. Perkins, of Philadelphia, representing the Eastern Paving Brick Manufacturers' Association; George H. Reiter, Illinois Paving Brick Manufacturers' Association; W. R. Schoonover, Indiana Paving Brick Manufacturers' Association; James R. Marker, Ohio Paving Brick Manufacturers' Association; J. D. Harvey, Southern Paving Brick Manufacturers' Association; Will P. Blair, vice-president, Maurice B. Greenough secretary the National Paving Brick Manufacturers' Association.

Expansion of the work in territorial branches of the National Paving Brick Manufacturers' Association will begin in August. The Eastern association at its recent meeting in Pittsburgh voted to increase its staff of field men from two to five and the Ohio association is planning to make the same increase. Headquarters of the Eastern association have been established in the Lincoln Building Philadelphia.

E. H. Reiter director of the Illinois Paving Brick Manufacturers' Association has recovered from his recent illness and is now back at his office in Springfield.



PENNSYLVANIA EMBARKS *on* ROAD PROGRAM

IN VIEW of the enormous road-building program upon which the state of Pennsylvania is just embarking, it may not be amiss to consider some aspects of the effect it will have upon brick-makers. That it will have a very marked effect goes without saying, for Pennsylvania, in the very nature of things, is pre-eminently the state in which one will ever find brick roads. Bearing that in mind, one could not escape the conviction that this road program means prosperity for brick men, even if one did not have concrete evidence that it will. And that evidence is becoming more and more plain every day, as the road contracts are being let.

Just how much Pennsylvania will spend for roads it is hard to estimate. Probably the sum will reach \$100,000,000. Fifty millions of that sum was assured for the program recently when the citizens of the Commonwealth voted a bond issue of that sum for a great comprehensive highways system that is to link up Pittsburgh and Philadelphia in a more positive good-roads manner, and which is to cover the entire state with its tentacles. Added to that \$50,000,000 is \$10,000,000 which is to be paid by the Federal Government within the next two years for the furtherance of the good roads idea. Then there is to be \$15,000,000 more from automobile license fees and a further indefinite sum probably several millions, to come from current revenues.

TOWNSHIPS MAY SECURE STATE AID

Totaled, there is already something between \$78,000,000 and \$80,000,000 in sight, all of it to be disposed of thru the hands of State Highway Commissioner Sadler. In addition, some considerable sum is to be expended by the communities thru which the roads pass. An act of Assembly provides that counties or townships may ask for State aid in the development of highways, and in such an event the State agrees to pay not more than 50 per cent. of the expense, the remainder to be borne, usually, by the county and township jointly. The assumption by the State of this heavy portion of the burden is bringing many smaller communities into the program. There are, as yet, no figures to indicate in how far they are coming in, but an incident here and there illustrates the trend. In Allegheny County, for example, there is now under contract, road work that will cost the county \$3,600,000 and R. V. Warren, the road commissioner has at least half a million dollars more in work to be let before fall. Of course, Allegheny County is an extreme case, since it lies in the heart of the Pittsburgh industrial district, but reports from all over the state indicate that it is extreme merely in bulk and not in the ratio of road work. With a pace like that being set all over the State it is not hard to conceive of a total as big as \$100,000,000.

Judged by surface indications, the merit of the brick road is still a controversial subject among Pennsylvania authori-

ties, but there are instances here and there that indicate to the observer that it is emerging in a more or less favorable position. Take some recent specifications from the State highways department. One day, in the last week of June, Commissioner Sadler advertised for bids on a dozen roads which involved 289,867 feet of construction. Jobs involving 242,358 feet of that total called for brick, or at least hillside brick. Those bids will be opened in mid-July, and on the same day, the commissioner will accept bids for 107 miles of new road in which the ratio is said to be about the same.

PENNSYLVANIA ROADS OUT OF ORDINARY

Admittedly, specifications for hillside brick might not mean much in the aggregate under ordinary conditions, but ordinary road conditions cannot be said to exist in Pennsylvania. Anyone who knows the topography of the State realizes that. Pennsylvania is, from the road builder's viewpoint a collection of grades. A glance at a map illustrates that forcibly. A great range of hills—hills that are not merely hills but a constant succession of rolling heights and deep valleys—is stretched down across the state from the northeast to the southwest. It is so placed that there is no getting around it. A road that aspires to cross the state in almost any direction must reconcile itself to the conclusion that the only way for it is to go as the old Romans went with their roads: straight ahead without thought of or care for obstacles.

Against brick it has been argued in Pennsylvania that its glaze makes it unsuitable even for hillside roadwork, but the State specifications, coming as they do at a time when the controversy over relative merits has raged fiercely and finally subsided, are probably to be taken as an answer to this. Despite all that could be said against brick, brick are still accepted by the State as measuring up to the standard it has set for the highways systems which is the final expression of its desires in that direction.

In conclusion it might be as well to make it plain that the instances that have been quoted above are merely instances and not to be taken as setting the measure of the whole. Thus the 107 miles mentioned as now being bid upon is only a relatively small amount out of a very great total of roads. The most recent figures show that there are 97,940 miles of township roads in the commonwealth and the road program of the State already has taken cognizance of about 300 distinct roads or main travel routes, any one of which means a considerable extent of new construction.

In participating in the construction of the new State system, brick men will be helping to perpetuate some of the most famous roads in America; roads that were laid out along old Indian trails and that are placed unmistakably in the antiquity of origin to which they are entitled by such names as "the King's Highway" and "the Queen's road."

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products Such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

SANITARY WARE FACTORY USES MONORAIL TO MOVE STOCK



ASTING vitreous china sanitary ware is not a new process, altho it has not been in use in this country for very many years. There are a number of large potteries scattered thru various states making their ware by this process, but a very interesting factory is that of the Abingdon Sanitary Manufacturing Co., whose plant a representative of *Brick and Clay Record* had the pleasure of inspecting just a short time ago.

The establishment is laid out along very modern lines, and besides making sanitary ware it also makes desk lamps, electrical specialties and other miscellaneous ware. The factory is a two-story structure with sky-lights at convenient places to make the interior unusually well lighted.

The clay, flint and spar is shoveled from the storage bins onto a weighing car, in the correct proportions, and then into the two blungers which are located on the ground floor. The agitators, screens and pumps, of which there are two sets, are located on a submerged floor. Two filter presses are used and the press leaves are fed by hand into a second set of blungers. The clay slip is then pumped into a tank located in a four-story tower, which is also the elevator shaft for bringing down green ware from the casting shop.

The casting shop is located on the second floor of the factory building. A four-inch supply pipe furnishes the clay to the benches, where the ware is cast in plaster molds. When the product is dry enough to be removed from the molds it is set upon shelves to dry completely. Live steam is turned on at night and a recording thermometer is used to record the temperatures thruout the day, as well as during the night. The drying temperature is well over 100 degrees; plenty high enough to make the night man sweat.

The green ware is mainly sponged and sand paper is used not so generally as at a great number of similar plants.

The biscuiting is done in three large combination up and down draft kilns of 1,000 closets capacity. Bisque ware is burned to cone 9. The glost burn is done in two small kilns of 500 closets capacity. These are up-draft kilns and the glazes are matured at cone 6. In a third biscuit kiln the bungs between the fire boxes and the first circle are biscuit, and in the center glost ware is set. The kilns are coal fired, the burn being of about forty-five hours' duration. Cones

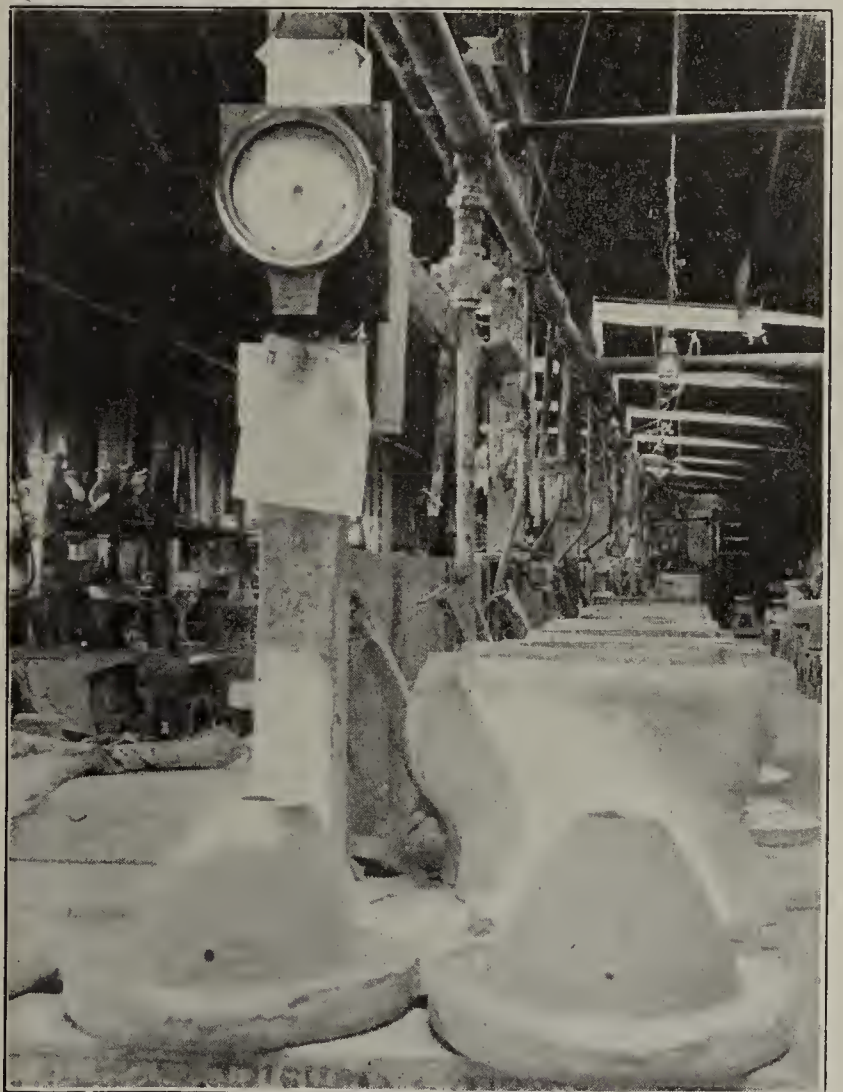
and Veritas firing rings are used in telling the progress of the burn.

Two men are kept continually busy making saggars. A unique feature in the line of moving stock to and from the kilns is in use at this plant. Double deck trucks, which run on an overhead monorail, serve to distribute the ware drawn from the kilns to the stock room, and also supply the green ware to the kilns from the manufacturing departments. The conveyor has a capacity of sixteen closets or twenty-four tanks. This system was only recently installed and has been found very satisfactory.

* * *

Pottery Workers Ask Wage Increase of 25 Per Cent.

Pending submission to the Labor Committee of the United States Potters' Association a complete list of proposed changes in the new wage scale for the general ware trade by



Interior View of Clay Casting Shop Showing Pipe Lines. Note Also the Recording Thermometer in Foreground.

the National Brotherhood of Operative Potters, several salient changes in the existing scale have been announced, some of which are likely to cause lengthy discussion during the forthcoming joint wage conference. These salient demands are:

A general wage increase of approximately 25 per cent.

An eight-hour working day and four hours on Saturdays.
Pay to be distributed at noontime Saturday.

Improved working conditions for the purpose of bringing all pottery plants manufacturing generalware or dinnerware and its allied lines to a uniformly high standard.

In addition to the above demands, many others were agreed upon by the delegates to the Brotherhood convention, which has just been concluded at Atlantic City after a two weeks' session. The complete list of demands will be printed at once, and will then be presented to the office of Secretary Charles F. Goodwin, at East Liverpool, Ohio, for distribution among the manufacturers who are members of the organization. The manufacturers will meet later to make a thorough study of the demands, and the labor committee, of which W. Edward Wells, of the Homer Laughlin China Co., of Newell, W. Va., is chairman, will then be guided by the wishes of the manufacturers in the joint conference debate. The existing wage agreement expires October 1 next, and concerns over 5,000 pottery workers engaged in the industry thruout the United States. It is possible, however, that several conferences will be held between officials of the United States Potters' Associations and the Brotherhood officials before the joint conference is called.

Practically all the operations in the generalware pottery industry are on piece work. It is intimated unofficially that the wage increases incorporated in the new list of demands have been so worked out as to give each employe as nearly as possible an advance of 25 per cent. If eventually this wage advance demand is authorized, then the pottery workers will be receiving the largest wage in the history of the trade.

Heretofore each pottery worker has been self-governed, so far as his hours of labor are concerned. He could go to the shop as early as he desired, and he could remain at his bench as long as he or she wanted to. Also, each worker could quit work when he so desired, no matter how much ware was turned out.

This rule has resulted in many workers remaining on the job longer than eight hours and others have worked a less number. The Brotherhood convention frowned upon the plan of some workers remaining at work longer than eight hours, but left the time of starting and quitting up to the individual worker, this meaning that the worker should put in eight hours, no matter when he started.

Modern sanitary conditions are wanted in all potteries. In some of the old plants it is almost impossible to make changes in a physical way because of methods of early pottery construction. The recently built pottery, so far as construction is concerned, is almost as different as day is from night.

That the manufacturers will insist that the workers exercise more care in their work is generally admitted by those in close touch with the existing situation. That much waste has resulted from undue haste is admitted by the manufacturers. It has also been said that it would pay manufacturers in the saving of losses in bad ware to allow workers more money for their eight hours, providing all workers remained at their posts eight hours.

While no time for a joint wage conference has been set, it is reasonable to believe that such a meeting will be held either in Atlantic City or some other eastern city, this being the rule in the past.

* * *

Gas Shortage Faces Ohio Potteries

Pottery and other clay product manufacturers in the Ohio district supplied with gas by the Manufacturers Light & Heat Co., of Pittsburgh, may "go on coal" for kiln firing this fall on account of a ruling of the Public Utilities Commission of Ohio which has just been issued.

Notices just received by the pottery manufacturers read as follows: "You are hereby notified that the Public Utilities Commission of Ohio has renewed for a period of one year its Administrative Order No. 34, which provides that in periods of gas shortage, industrial consumers shall be cut off, and, in the event of continued shortage domestic consumers may be limited to a maximum supply of 35,000 cubic feet per month." On account of the open winter, there was little if any shortage of gas for industrial purposes last season, while during the 1917-1918 winter plants were shut down many days because of the shortage. Several East Liverpool, Ohio, pottery manufacturers are now making long term contracts for coal supply, it being their intention to operate plants steadily, whether or not gas can be obtained.

* * *

British Pottery Men Visit Germany

A deputation from the British Pottery Manufacturers' Federation, representative of all branches of the industry, visited the occupied territory of Germany for the purpose of inspecting the pottery manufacturies located there. The most important of these is the extensive earthenware works at Bonn.

From the technical point of view the Germans have little they can teach the British earthenware manufacturer, except the more extensive application of the casting process, than obtains in Great Britain.

The future of the china trade depends on the cost of production in comparison with the cost in other countries. Wages are high in almost every department, and, indeed, manufacturers do not wish to see them low again. Any cheapening in the cost of production must come from a cheapening in the price of materials, freights, and so on, with the further assistance of good factory organization and discipline, economical methods of manufacture, and real cooperation between employer and employe.

British manufacturers were compelled to certify to the foreign customs, and to the colonial customs as well, that the price at which the goods were being sold was not lower than that prevailing in the home market. Yet, so far as the Germans were concerned, there was positive proof that their foreign trade was subsidized and their goods sold abroad cheaper than at home. That must not continue. So long as the Germans and other pottery producers abroad compete with British manufacturers on equal terms, Britain can hold her own—given the real cooperation of the operatives in speeding up production in the space of their shorter hours, instead of doing as little as possible within the period of work.

* * *

There is no change worth recording in the pottery situation at Trenton, N. J. The general ware plants are maintaining top production, with demand for material keeping right along with the pace; china and tableware is operating under fine call, and the local potteries in this branch of the industry certainly "know how," when it comes to good manufacture. The electrical porcelain plants are feeling the effects of the resumption in building work, and these potteries in the wide majority are busy. The same holds true with the sanitary ware plants, altho here maximum output has by no means been reached, nor will it in all likelihood for some months to come. But the outlook is encouraging for high grade sanitary fixtures; hotels and other buildings presenting possibilities for good sized orders are being projected, not only in New Jersey and New York, but in other parts of the country, and distance does not mean anything to those who want high grade material of this nature that the

potteries in such line at Trenton know so well how to turn out.



Sanitary ware potteries in New Jersey were well represented at the recent convention of the National Association of Master Plumbers at Atlantic City, and particularly so of the Trenton district, which, of course, is very prominent in this line of manufacture. A number of the prominent potteries in this section had fine exhibits at the different booths, including the Trenton Potteries Co., the Monument Pottery Co., the J. L. Mott Iron Works and Thomas Maddock's Sons Co. These showed high grade fixtures of all kinds, and the entire sanitary ware show was excellent. A. M. Maddock of the Maddock Pottery was in attendance, assisted by J. F. Kelly, John Bitzer, E. B. Lane, H. G. Miller, Lee A. Kelly and J. T. Sullivan. The Fords Porcelain Works, Perth Amboy, also had a splendid exhibit of its high grade fixtures, showing pedestals, flush tanks and specialties of all kinds. Not an opportunity was lost to impress the master plumbers from all parts of the country with the quality of ware that the New Jersey potteries are turning out. The exhibit was well patronized by those in attendance.



Experiments are being conducted at the Urbana, Ohio, pottery under the supervision of the Federal Bureau of Mines to determine the commercial value of clays found in Mississippi, and said to be of value for the manufacturing of high-grade porcelain. Dr. E. N. Lowe, state geologist, of Jackson, Miss., forwarded the Urbana plant a large variety of clays for testing purposes. In these collections were two samples of white clays which it is believed are very valuable. In previous local tests these clays have been found to have retained an unusual degree of whiteness and brilliancy even after being fired to high degrees. The outcome of the tests rests upon the possible erection of a large pottery plant in the vicinity of Jackson. The clays were taken from deposits in Tishomingo, Enid and Tallahatchie Counties in Mississippi.



The Thomas Maddock's Sons Co., Trenton, N. J., has arranged to give all women employes who have worked at the plant continuously for at least six months prior to June 1, a week's vacation with full pay. All employes who may have been working less than this period up to the time noted, will be allowed one day for each month that they have been engaged. The plant is now maintaining operations at a high rate of production and is so busy that the annual outing of employes will be held on a Saturday, a short working day. The exact date will be decided later. C. S. Maddock will be in charge of the arrangements for this outing.



The demand for decorated dinnerware is now admitted to be the heaviest in the history of the pottery business. Additional decorating kilns have been erected in a number of Ohio plants. Contracts for new decorating kilns to be built in the plants of the Edwin M. Knowles China Co., at Newell, W. Va., and the Taylor, Smith & Taylor Co., at Chester, W. Va., have been awarded. New business continues to be received in heavy volume in all general ware potteries, and several are reported to be oversold for the current year delivery.



A petition in bankruptcy has been filed by the Shaw Pottery Co., of Trenton, N. J., which some time ago acquired the plant of the Morris China Co., at Trenton. The petition was signed by James Shaw, president of the company, and

Edwin C. Long, attorney for the petitioner. Liabilities were listed in the petition as \$41,037.17 and the assets \$39,032.25, of which \$30,000 was given as the valuation of the plant of the company and its real estate holdings. Listed in the liabilities are a number of notes given for materials and other improvements.



The Sanitary Pottery Salesmen's Association held its mid-summer meeting at Atlantic City, on July 10, with a total attendance of more than fifty members from different sections of the country. The business session was devoted to routine matters, with an interesting discussion of trade conditions and trade-getting possibilities at the present time. E. S. Thompson of the Thomas Maddock's Sons Co., Trenton, N. J., is president of the association, and George Dyer, also of Trenton, is secretary-treasurer.



Three bisque and two glost kilns are now being built at the new plant of the Illinois China Co., at Lincoln, Ill., by Gamble & Bryan, of East Liverpool, Ohio. The pottery concern formerly operated a small plant at Roodhouse, Ill., and some months ago decided to remove to Lincoln, where better working facilities were obtainable. This move necessitated the erection of a new battery of kilns. A general line of ware will be the product of the Illinois company.



Joshua Poole, general factory superintendent for the Homer Laughlin China Co., with plants at East Liverpool, Ohio, and Newell, W. Va., has returned from an extensive trip thru England for the purpose of obtaining increased supplies of English china clays. It has been pointed out that some of the grades of clays obtained from the English mines produce somewhat better results than the exclusive use of American clays. Mr. Poole was abroad about six weeks on this mission.



"Pottery Possibilities in Vicinity of Macon, Georgia," is the title of a booklet issued by the Chamber of Commerce of Macon, Ga., and the Central of Georgia Railway. It contains a detailed report concerning materials used in the manufacturing of pottery products found in the vicinity of Macon and other Georgia points. There are no general ware potteries in Georgia, altho a number of stoneware and red clay plants are to be found there.



At Hereford, Pa., used to live the late William Slight, who sixty years ago was one of the well known potters of eastern Pennsylvania. Just recently one of his pots was found in possession of Ambrose H. Huber, of Hereford, bearing the date of 1859, made of red clay, the size to use for a flower pot, which the late potter purposely constructed for Huber's father, the late George Huber. It is still in a fine condition.



An additional kiln is now being built at the plant of the Keyser (W. Va.) Pottery Co., manufacturers of sanitary ware. During the last few months the demand for sanitary pottery has shown marked advances, and additional capacity has been needed in some of the plants.



The capital stock of the Chelsea China Co., operating a vitreous hotel china plant at New Cumberland, W. Va., has been increased from \$100,000 to \$250,000. The plant which has been idle for almost a year is to be placed in immediate operation.



Sanitary pottery workers are now working under a new wage scale which gives employes a wage increase ranging from twelve to fifteen per cent. above former schedules. The increase became effective the first full pay in July.

NEARLY TWO MILLION DOLLARS WORTH OF WHEAT WAS HARVESTED IN THIS COUNTY THIS SUMMER

OVER 50 COAL MINES IN SULLIVAN COUNTY PRODUCE ABOUT 10,000,000 TONS YEARLY

THE COUNTY HAS ALSO MANY PRODUCING OIL WELLS & A SEEMINGLY INEXHAUSTIBLE SUPPLY OF NATURAL GAS

SULLIVAN COUNTY INDIANA

back of

MUTUAL

THE LARGEST SILO IN THE WORLD IS IN SULLIVAN COUNTY — A COUNTY FAMOUS FOR ITS PRIZE WINNING LIVE STOCK

OVER 500 well-to-do citizens of Sullivan County, Indiana, became stock holders in the Mutual Truck Company, partly for personal profit; but largely because they became convinced that by making Sullivan the home of

"America's Greatest Truck"

are being satisfied with a small return (9%) on their investment, they could build up so large a volume of business that their community would, in time, become the home of America's Greatest Truck Company.

These wealthy farmers, stock raisers, coal mine owners, oil and natural gas producers, merchants, public officials

and professional men stand squarely back of us, with ample capital to build any number of Mutual Trucks that our customers will demand.

A new plant, with a capacity of producing 10 trucks a day, has just been completed and is in operation.

Our advertising and sales plan is based upon the intensive and scientific analysis of haulage problems in each of many industries; and upon rendering an individual service to each of our customers that will be quite out of the ordinary.

We will sell our trucks, either complete with bodies, or chassis only.

Sizes 2-ton—3½-ton—5-ton. All over-powered, oversized and under-priced. Study specifications on next page.



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"AMERICA'S GREATEST TRUCK"

Built wholly from units and parts that have proved themselves to be *the Masterpieces* of the truck industry.

Specifications 2-Ton Mutual Price — Chassis — \$3,375.00

Engine—Wisconsin UAU four-cylinder 4 1/4 x 6, SAE Rating, on bore only, 29 h. p. Actual power, calculating both bore and stroke, 39 h. p. at 1000 rpm. Most other high priced 2-ton trucks use 4 x 5 1/2 motors rated at 25.6 h. p. Wisconsin was selected, because an exhaustive study of all makes convinced us that it was "America's Greatest Truck Motor".

Clutch—Hele-Shaw—Universal No. 5 with Multiple grooved plates running in oil. Remarkable for its smooth, regular pick-up and firm final grip; its ease of operation and wear-defying long life. Costs us two to three times as much as clutches used on most other high priced 2-ton trucks.

Universal—Spicer—Highest priced and universally acknowledged to be the best. Three joints in the shaft and one in the Universal clutch.

Transmission—Fuller, Model G-5, mounted amidships; 4 speed forward and reverse. How many other trucks offer four speeds?

Frame—Parish & Bingham Pressed Steel—6 1/16 in. channel, with 3 in. flange, pressed from 1/4 in. alloy steel. We could build our own from structural steel at half the cost.

Springs—Mather Chrome Vanadium Steel. Best and cost most.

Radiator—Perfex—Cast type, three-point suspension, of our design.

Steering Gear—Ross—with 20 in. wheel. The costliest and most highly perfected type of the most famous maker.

Magneto—Bosch, ZR4, waterproof, and dustproof; with impulse starter.

Carburetor—Stromberg "M"—Latest type.

Cab—Weather-tite, whose equal no other truck maker will furnish for less than \$175 extra—is a part of our regular equipment.

Castings—Electric steel at vital points where others use malleables.

Governor—Duplex (not Simplex) type, controlling both engine speed and road speed independently from each other.

Rear Axle—Worm drive 2 1/2 ton size, ball bearing. Highest priced axle put on a 2-ton truck.

Front Axle—Sheldon, ball bearing steering knuckle type.

Wheels—Smith Metal Wheels, for solid tires and Dayton Steel Wheels for pneumatic tires; furnished as regular equipment, tho they cost us 55% more than the best wood wheels.

Tires—Firestone or Goodyear. 36 x 4 front and 36 x 8 rear, solid tires. Pneumatic tires are furnished at a reasonable extra charge.

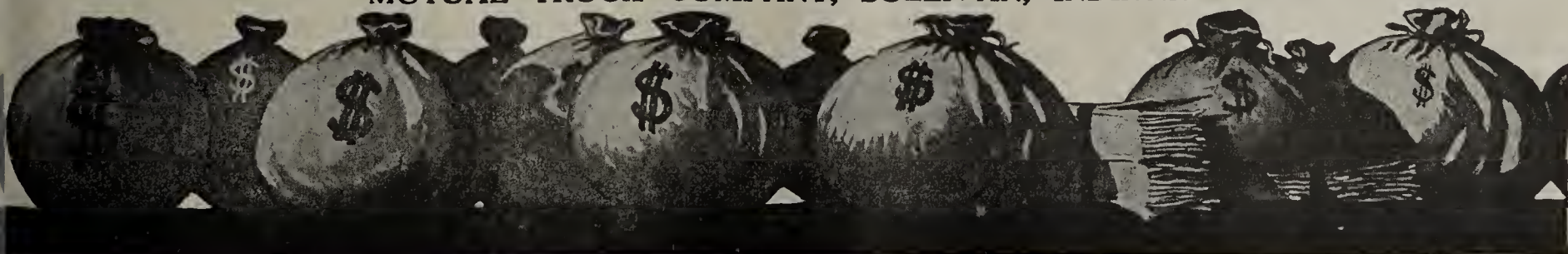
Bushings—Bound Brook Oilless, thruout. Eliminating oil and grease cups, and insuring constant lubrication.

Gas Tank—25-gallon capacity.

Reserve Lubricating Oil Tank—2 1/2-gallon with indicator and feed valve on dash. No other truck has this important feature.

Some high class trucks have some of the above super-specifications but no other truck in America offers all of them, or corresponding parts of equal merit or equal cost. Our 3 1/2 ton and 5 ton trucks are equally noteworthy ranking with the 5 and 7 ton trucks of other makes in power, loading space and general dimensions.

MUTUAL TRUCK COMPANY, SULLIVAN, INDIANA



More for the Money

Compare the specifications given below, item for item, with those of any or all other good trucks, and ask the salesmen of the other makes how much extra they would charge for substituting "Mutual" specifications for their own—including electric lights, weather-tite cab, steel wheels, over-size engine, double-control governor, etc.

Any and every analysis of this kind will prove our statement that the Mutual gives more value per dollar of cost than any other truck.

MUTUAL TRUCK COMPANY

PHILIPPINES CLAY PRODUCTS SITUATION

By Monroe Woolley

CONDITIONS are very favorable in the Philippines for the commercial manufacture of brick, building block, tile, slabs, marbles, and ornamental stones from sand and lime. The cost of manufacturing and selling nine-inch brick of the best quality is estimated not to exceed 13 pesos (\$6.50 United States currency), per 1,000. This, in comparison with the price of other building materials there, offers a considerable margin of profit.

Sand, limestone, and clay, altho the most common, familiar, and, perhaps, the least appreciated of mineral resources, nevertheless constitute an asset of importance to any country. Limestones of excellent quality are abundant and of widespread occurrence thruout the Islands. In certain localities there is also an abundance of sand, shale, or clay, the physical and chemical properties of which guarantee to this archipelago stable industries among which the manufacturers of cement, quick-lime, hydraulic lime, sand-lime brick and artificial stone products, building, vitrified, and fire brick, and vitrified pipe, tile, and other ceramic products are certain to become in time exceedingly important.

GOOD DEPOSITS OF FIRE CLAY

Deposits of good fire clay, suitable for the manufacture of furnace brick, are known. During the fiscal year 1913, 1,556,000 brick were imported into the Philippines from abroad. The market value of this importation at the time was \$27,500. The greater part of the shipments consisted of fire brick, due to the fact that few buildings in the islands, except business houses, and the more pretentious government buildings, are built of any material other than wood.

Clay and shale suitable for use in the manufacture of clay products, such as building and paving brick, tile and common pottery, occur in such abundance and are so generally distributed in the Philippines that they are available in practically every part of the archipelago.

No vitrified products are manufactured there. Owing to the great expense of importing vitrified pipe, tile, and brick, the consumption of these articles is small compared to what it might reasonably be expected to be were articles of this kind manufactured at home.

LARGE DEMAND FOR BRICK AND TILE

However, vitrified brick for paving both country and city roads, vitrified pipe for drains, and tile for floors and roofs, are certain to be used in large quantities when they can be obtained at reasonable prices in large quantities. In fact there is a heavy demand for tile for floors and roofs already, due to these things entering into the Spanish architectural scheme. All hardwood homes almost invariably have tiled roofs, and the kitchens and bathrooms of the homes of the illustrato class are floored with large red tile. One sees very little, if any, fancy, small-sized tile floors in the homes.

There is an unusually large number of deposits of kaolin-itic clay which can be used as a filler in the manufacture of pipe, and from which white stoneware could be manufactured. There are also several deposits of pure white burning kaolin. Feldspar and silica are available for blending with this clay in the manufacture of porcelain. Hydrous aluminum silicate occurs, the texture of which is similar to the amorphous colloidal clay known as fuller's earth and used for bleaching, and for clarifying and filtering fats, oils and greases.

While the clay resources of the Philippines are practically untouched, the value of the locally manufactured clay products amounts only to \$225,000 per annum. Common clay is used for crude pottery, brick, and tile; white clays are used in minor quantities for pottery, and in the manufacture of cold-water paints.

Anyone who understands clay products manufacture should find profitable openings for establishing plants in the Philippines. Labor there is cheap, intelligent, and dependable. On the other hand, the field is rich for exploitation by tile and clay products manufacturers in this country, as it will, in the course of ordinary events, be years yet before local plants can meet the demand of the country. The raw material is there aplenty, but there is a woeful lack of manufacturing initiative.

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Clay Workers Discuss Alien Tax Law

At a recent meeting of the New Jersey Clay Miners and Manufacturers' Association, held at Perth Amboy, the business session, following an enjoyable dinner, was devoted to a discussion of the Alien Tax Law, a rather pertinent and important subject these days. This measure is none too simple for employers to carry out to the full extent desired by the Government, and the clay producers and ceramic manufacturers in this district are rather at a loss to know how to act in every particular.

An interesting and illuminating address in regard to this matter was made by Mr. Dalton, revenue collector for this section of Middlesex County. It was pointed out that enemy aliens who do not sign the form blank, designated as No. 1078, which is a certificate setting forth residence in this country, or who anticipate leaving the United States at an early date, possibly as soon as such can be arranged, must pay 12 per cent. of their net income. As this is collectible at the source, it rests with the employer to deduct this amount from the employee's wages, and make a return to the revenue collector. If form No. 1078 is signed, the alien is exempt from taxes, the employer holding the signed blank, which relieves him of all responsibility.

The tax is collectible dating from January 1, 1919; many clay plants in this vicinity have employed aliens, and a number have now left the works, with present whereabouts unknown. Thus, these ceramic interests are rather at sea as to just what can be done. From now on there will be no such difficulty, apparently, as to be forewarned is to be forearmed. The matter as a whole, however, imposes a duty and responsibility on clay plants and other industries, and it looks like nothing short of real trouble and anxiety from time to time.

There was a representative gathering of local clay men at this meeting, among those present being: L. H. McHose, president of the association, head of the McHose Clay Co., Perth Amboy; Roy H. Minton and Fred Whittaker, General Ceramics Co., Metuchen and Keasbey; C. W. Crane, C. W. Crane & Co., New York; August Staudt, president, the Perth Amboy Tile Works; C. H. DeVoe, Old Bridge Enamel Brick & Tile Co.; Victor W. Main, National Fire Proofing Co., Perth Amboy; Abel Hansen, Fords Porcelain Works, Perth Amboy; R. L. Claire, Federal Terra Cotta Co., Woodbridge; P. C. Buechner, Crossman Co., South

Amboy; George M. Valentine, R. N. & H. Valentine, Woodbridge; Henry J. Koch, Perth Amboy; J. H. Leisen, Woodbridge; Mr. Ammann, Such Clay Co., South Amboy; Fred F. Anness, Anness & Potter Clay Co., Woodbridge; F. W. Schimdt, Didier-March Co., Keasbey; C. Von Hartz, Didier-March Co.; Milton Edgar, Metuchen; S. G. Brinkman, Fords; Otto Will, Roessler & Hasslacher Chemical Co., Perth Amboy; Mr. Weaver, Mr. Parsons, Mr. DuBois and Mr. Rasmusen.



Recommendations on Resale Price Fixing

The Federal Trade Commission in a special report to Congress renewed its recommendation made last December that manufacturers be permitted by law to fix and maintain resale prices, subject to review by a disinterested agency.

The Commission says that such a law would remove present complexity in the business world, promote the efficiency of manufacturing and commercial institutions and serve the interest of the consuming public.

Under the Commission recommendation, manufacturers desiring to fix and maintain resale prices would file with an agency to be designated by Congress, descriptions of their articles, contracts of sale, and the price schedules to be maintained. The disinterested agency would be charged with the duty, "upon complaint of any dealer or consumer or other party at interest," to review the terms of contracts and prices.

The Commission's recommendations, it stated, were based on the following conclusions:

(1) That producers of identified goods should be protected in their intangible property right or good-will, created thru years of fair dealing and of sustained quality of merchandise;

(2) That the unlimited power both to fix and to enforce and maintain resale prices may not be made lawful with safety; and

(3) That unrestrained price-cutting is not in the public interest, and tends, in the long run, to impair, if not to destroy, the production and distribution of articles desirable to the public.



Cleveland Distributor, Back from Southwest, Puts Ohio Ahead in Building

However progressive other parts of the country are in promoting building and especially building with brick or other fireproof materials at this time none can compare with the activity now in evidence in Northern Ohio.

This is the opinion of R. L. Queisser, head of the R. L. Queisser Co., Cleveland, Ohio, following a tour of the Northwest, West and Southwest. On his trip Mr. Queisser covered about 7,000 miles in the last month. He visited every state on the Pacific Coast, and stopped at most of the large cities. He reports there is plenty of new building going on in these localities, particularly in California, Utah and Colorado, but that none can compare to the amount of building going on now in the district within a radius of 75 miles of Cleveland.

The most significant development in the opinion of Mr. Queisser, is the united effort of brick interests to reach the building public and to influence the prospective home builder in the use of brick. This is being done on a large scale in Los Angeles he finds, with dealers well organized and prepared to push a publicity campaign for the next several months.

"The principal object the Los Angeles interests seek is to create an interest in brick, as against stucco and cement housing, which has held the lead up to the present," says Mr. Queisser. "The work is progressing in a most systematic man-

ner. A paid secretary is directing the campaign, which is being conducted thru the newspapers. Inquiries received thru this source, and thru the regular dealer channels are being followed up by the distribution of literature, house and floor plans and vital information and figures indicating the value of brick as against the use of other materials. For example, one piece of information shows that the brick used in a \$10,000 house only costs \$540."

Mr. Queisser, while a captain in the Ohio National Guard, saw active service at El Paso while guarding the Mexican border during the troubles 1916-1917. He naturally spent considerable time there on this trip. He finds that El Paso can boast of having more brick residences than any other city of its size. "Miles of brick bungalows are already built or in course of construction, making a magnificent sky line in many parts of the city," says Mr. Queisser. "They are well built and the architecture is distinctive. Most of them are of the one and one-half story type, being considered cooler in summer and warmer in winter, as they can be heated with oil burning stoves. One reason for the unusual progress in this direction is that there are numerous good clay fields not far from El Paso."

One of the largest plants in the Southwest is now in operation, being owned by the brother of Eben Rogers, formerly president of the National Brick Manufacturers' Association. Another interesting point that Mr. Queisser brings back with him, and one of vital interest to Cleveland and Ohio brick and material interests at this time, because of the present attitude of labor, is that concerning a brick plant operated by organized labor. This is known as the National Brick Layers' Union plant, and was built at a cost of half a million dollars. It was put up, Mr. Queisser was informed, by organized labor, because bricklayers refused to lay brick that was not guaranteed to be made at a union plant. The plant has been in operation several years, and has been operated at a loss all that time.

"I find that the same conditions that make for higher prices for brick and other building supplies in the Cleveland district hold good in other parts of the country," says Mr. Queisser. "The two outstanding factors are labor and coal. In most brick and building supply manufacturing centers, plans are generally inaccessible for the labor. Labor is made comparatively scarce, as a consequence, and scarcity means increased cost. I found that the cost of producing brick, as far as coal is concerned, is generally about the same in all parts I visited. It takes about one ton of coal to make 1,000 face brick, and coal now is an average of \$3 a ton higher."



Containing Information on Combustion

One of the most interesting and helpful papers issued by the United States Fuel Administration in conjunction with the Bureau of Mines, is technical paper 219, entitled, "Combustion and Flue Gas Analysis." This paper tells how flue gas analysis detects excess air, why some excess air is necessary, explains use of pyrometers, and also gives some valuable information on the use of draft gauges and the best draft to use. A copy of this publication may be secured for five cents from the Superintendent of Documents, Government Printing Office, Washington, D. C.



The Eastern Executive Committee of the American Face Brick Association held its regular monthly meeting at the Penn-Harris Hotel, Harrisburg, Pa., on July 11. The meeting was in charge of R. D. T. Hollowell, who acted as secretary for the eastern committee.

The SUPERINTENDENT

Helpful Hints for Practical Men Whose Problem is Maximum Production With Minimum Cost

Using Waste Heat from Scove Kilns

The heat remaining in a scove kiln after a burn has been completed need not be wasted by radiating off into the air while the kiln is cooling. Yet this is what happens on nearly every common brick manufacturer's plant where the brick are set in scove or clamp kilns. The kilns are fired until maturity, when they are permitted to cool by radiation until the brick are cold enough to handle and can be loaded into wagons or trucks for distribution.

Drying in these cases must be done by open air racks, steam dryer or direct fired dryers. The first type is slow and undependable. The other two methods of drying are expensive. Very few successful attempts to dry brick with waste heat from scove or clamp kilns have been made. However, one common brick manufacturer in Canada devised a very clever means of using waste heat from his clamp kilns which could be adopted on most plants using the scove or clamp kiln.

At the factory of Merkley Bros. Ltd., Ottawa, Canada, common brick are made by the soft mud process and dried in a waste heat dryer. They are then set in the clamp kiln and burned. When the firing has been completed the kiln is covered with sheets of tin, except for a small space on top on the side opposite from which the heat is drawn. At every other arch are set iron ducts to connect the arch with the underground duct which runs alongside the kiln. This waste heat duct is four by four feet in dimensions and conveys the gases to a fan and thence into the dryer. The remaining arches and those on the other side of the kiln are sealed tight.

The fan is then turned on and cold air is drawn thru the brick on top and diagonally across the kiln to the arches and then passes thru the iron ducts into the waste heat flue and finally into the dryer. In its travel thru the kiln setting the air becomes heated because of coming in contact with the hot brick, and is used the same as the waste heat obtained from down-draft kilns. Besides using the waste heat from the scove or clamp kiln and effecting an economy in drying, the brick are cooled quicker than otherwise and the kiln can be opened sooner, resulting in a quicker kiln turn-over.



Weather Resistant Glazes

The glazes that are ordinarily used on colored clays are frequently not sufficiently resistant to weather to make them serviceable for roofing tile or other articles which are exposed to outside atmospheric conditions. The formulae furnished below are very superior in this respect and have been used with success on tile which has been exposed to the severities of a continental European winter. It is, of course, likely that the glazes suited the clays used, and that they would have to undergo some modification before they were equally satisfactory with other clays. However, it should not be difficult nor costly to ascertain this.

The above tile were made by pressing the clay dust in an almost dry state, in a die into which the glaze material had previously been placed. The clay used was one which became

dense when burned to cone 07-08. It could not be glazed by the ordinary methods of dipping or coating, because the glaze would immediately peel or blister upon application. When the glaze was mixed with one-third of its weight of dextrin, moistened very slightly and sieved lightly into the die, the results were quite satisfactory.

Owing to the length of time required for burning the bodies it was necessary to use fritted glazes; raw glazes lost the greater part of their volatile and left a residue too rich in silica. Fritting the glazes adds to the cost, but is less expensive than burning the tile twice—once without the glaze and once with it applied.

The range of composition of the glazes is as follows:

Lead oxide	122 to 177 parts
Potassium oxide	0 to 9 parts
Sodium oxide	0 to 10 parts
Magnesia	0 to 2 parts
Lime	3 to 11 parts
Alumina	15 to 20 parts
Silica	120 to 144 parts
Boric oxide	28 to 35 parts

The two extremes of these glazes correspond to:

	A	B
Lead oxide	122	177 parts
Potash felspar	56	..... parts
Soda felspar .....	.....	139 parts
Whiting	5	20 parts
Magnesia	2	..... parts
China clay	13	..... parts
Flint	78	54 parts
Boric oxide	28	35 parts

It will be observed that there is a considerable range in composition and that the glazes have a moderately high fritting temperature.

An interesting point is raised by the foregoing suggestion, viz.: that where raw bodies are glazed in a manner corresponding to the production of encaustic tile, the use of a fritted glaze appears to be essential. If this should be proved to be generally the case it will open up a wide field of usefulness and may explain the great durability of some antique glazed tile which are on a body of relatively low refractoriness, but are far more durable than many modern tile.



Lubrication of Shaft Bearings

There are a number of different oils that can be used for lubricating shaft bearings but different conditions call for certain kinds of oils. Two features of oils should be known before any choice of lubricant is made. One is the temperature at which the oil congeals and ceases to be fluid. This may be determined by placing a quantity of the oil to be tested in a jar which is put in a freezing mixture and kept there until the oil solidifies. The jar is then taken away and the solidified oil stirred as the temperature rises. A thermometer may be used as the stirring rod and the temperature noted when the oil becomes fluid and runs again.

The other property of oil that should be determined is its resistance to being squeezed out. A comparison of the viscosities of various oils at sixty-five deg. Fahr. is given in a table below. Viscosity is the resistance to flow. The greater the viscosity the less flow there is and consequently the less tendency there will be for it to become squeezed out.

The viscosities of various oils compared with sperm oil which is taken as unity are:

Light mineral oil.....	1.70
Cottonseed oil	1.90
Olive oil	2.00
Lard oil	2.20
Rape oil	2.30
Neatsfoot oil	2.40
Tallow oil	2.50
Heavy mineral oil.....	4.00
Castor oil	23.00

As the temperature increases, oils become more fluid, hence it is very important to keep bearings cool. At about 220 deg. Fahr. these oils are nearly equally fluid. In studying the comparative fluidity of oil it is essential to consider the temperature at which the figures are taken.

The body or viscosity of a lubricant is very important since the more viscous it is the greater will be the pressure which it can sustain without being squeezed out from between the lubricated surfaces, but care must be taken not to use a lubricant unnecessarily viscous, or the increase in fluid friction will neutralize the beneficial results of the lubricant. The best lubricant is that which can just keep the moving surfaces apart under the greatest pressure likely to be obtained at the point of contact.

For high speed shafts having a light pressure on the bearings, a good lubricant to use would be sperm oil mixed with mineral oil, or sperm oil for usual working conditions. Olive oil is good for low speed shafts with light pressure. Sperm oil mixed with castor oil for high speed shafts with heavy pressure is recommended and rape oil and lard oil for low speed shafts with heavy pressure on the bearings.

For shaft journals having considerable play in the bearings thick lubricants like graphite and grease are best. Grease is well adapted to slow moving journals but it is not suitable for lubricating machinery running at high speeds. Where there is dirt in the journals such as in elevators and conveyors grease is desirable. Lubrication with grease cups is positive and an excess of grease will form ridges around the shaft at the ends of the journal and close the openings to the entrance of sand or dirt. It is safe to use grease lubrication on all bearings where the shaft makes less than 150 r. p. m.

For heavy machinery, where the viscosity of the lubricant must be exceedingly great, soft solids are frequently employed instead of oil, the hardness of the material increasing with the pressure on the bearings and ranging from grease thru graphite, mica, steatite, sulphur, to various metals. It must be borne in mind that the thicker the oil the greater the power which will be necessary to drive the machine, so that the lubricant should be as fluid as the weight of machinery and the speed of rotation will permit.



Importance of Air Control in Combustion

To insure complete combustion, every particle of carbon in coal must come in intimate contact with enough heated air to supply $2\frac{2}{3}$ pounds of oxygen to each pound of carbon. This weight of oxygen would be contained in 11.5 pounds of air. However, owing to the rapid passage of air thru a furnace some of it never reaches the fuel, hence an excess of about 40 per cent. of air, which contains the oxygen required, should be used.

On the other hand, a pound of carbon cannot possibly combine chemically with more than two and one-half pounds of oxygen. Therefore, to use more than the minimum excess of air necessary, under furnace conditions, to insure this

proportion, is simply to provide in this needless excess a vehicle for the transfer of heat to the stack. A larger mass of air to be heated means a lower temperature in the gases passing thru a kiln interior or over boiler tubes. It also means greater velocity of the gases; both reduce the ratio of heat absorbed to heat generated. The result is increased stack losses. This shows conclusively that the control of the air supply is absolutely indispensable to the efficient operation of a furnace.

Both air and the products of the chemical union of air with carbon (carbon dioxide or CO_2 and carbon monoxide or CO) are invisible, therefore, we can tell very little as to the air being supplied a furnace by looking at it, or even into it; still less can we judge as to the heat which a kiln or boiler is absorbing if we use the eye alone. The answer to this is absolute control of furnace conditions by means of flue gas analysis and temperature and draft control.



Paying Wages Thru a Bank Account

Not long ago the manager of a big industrial plant in England saw several hundred of his employes crowded around the paymaster's window, drawing their wages. It struck him that this was not only a waste of their time, but that it was an undignified scramble for the money they had earned. He would not have liked to get his own salary that way. It seemed as tho a more modern method of paying wages might be contrived.

Going back to his office, he worked out a plan that combines dignity, time saving and thrift. This has been approved by the company, and is now optional with employes, many of whom are taking advantage of it.

Instead of asking employes to congregate around the pay window and wait their turn, they may open a checking account at any bank selected by themselves, and the company deposits wages each week to the employee's credit, in his own bank. The employe then pays household bills by check, draws out whatever cash is needed, and leaves the balance in the bank as savings. The company makes a further contribution to his account representing about five per cent. interest on all money which he is able to save.—*Wood Construction.*



Brushes an Aid to Conveying Belts

Mr. Fleming, superintendent of the National Brick Co. Ltd., Delson Junction, Que., finds that a cleaning brush is a very great aid on the clay conveyor belt in his plant. In the winter and spring, when the clay becomes damp, it prevents the sticking of the clay, and also helps preserve the carrying surface of the belt. It is recommended that a brush of twelve inches diameter, but never less than eight inches, be used, with the face of the brush equal to the belt width.

The speed in feet per minute of the surface of the brush should be at least 800 to 1,000 for dry, dusty materials; 1,000 to 1,200 for damp materials, and 1,200 to 1,500 for wet, sticky materials. A brush for this purpose may be obtained from firms manufacturing conveyors, and it will be found that such a brush does not injure the belt.



Development of brick roads in various sections of the country is illustrated by the contracts let since January 1 in the territories of the Western Paving Brick Manufacturers' Association and the Ohio Paving Brick Manufacturers' Association. In the former 2,750,000 square yards have been let up to the present time, and in the latter 2,000,000 square yards.

IN *the* WAKE *of the* NEWS

Being a Brief Mention of a Host of Interesting Happenings in the Varied Fields of the Clayworking Industry

Personal

Dan Goodwin, of the Goodwin Tile & Brick Co., Des Moines, Iowa, is taking a two weeks' vacation with his family at Lake Okoboji.

Charles Frank, salesmanager of the Hocking Valley Brick Co., Columbus, Ohio, went to Huntington, W. Va., recently to look after an award of a street paving contract.

W. T. Matthews, salesmanager of the Claycraft Brick Co., of Columbus, Ohio, has returned from a business trip to Chicago and Cleveland, where he looked over the building situation.

Harry Tramp, of Tramp Brothers, Creston, Iowa, is on his annual vacation trip to Wisconsin. Mr. Tramp always makes the trip in his car which he has had equipped for just such purposes, and he lives in the open.

Will P. Blair, vice-president of the National Paving Brick Manufacturers' Association, Cleveland, has returned from a tour of Michigan, which he took in the interest of his organization.

B. C. Keeler, of the Mason City (Iowa) Brick & Tile Co., is taking his annual vacation. F. E. Keeler, recently returned from California to take charge of the plant while B. C. Keeler is away.

The Hocking Valley Brick Co., of Columbus, Ohio, has employed a new traveling salesman, H. D. Barger, who was an aviator during the war. He visited Green Springs, Ohio, last week, where there was a street letting.

Jno. M. Stoner, of the Cincinnati (Ohio) Clay Products & Supply Co., who represents the Hocking Valley Products Co. in southwestern Ohio, was a visitor in Columbus recently. He reports a good healthy building boom in the Queen City.

W. L. Hughes, representing the Weller Potteries, of Zanesville, Ohio, was recently in Louisville, where he called principally on the florists, who were in a buying frame of mind. Mr. Hughes reported an excellent trip.

Maurice B. Greenough, secretary of the National Paving Brick Manufacturers' Association, Cleveland, has returned from Kansas City, where he attended the July meeting of the Western Paving Brick Manufacturers' Association, stopping off at Chicago on his way back.

Jerome J. Shepard, head of the fire brick company of that name at Cleveland, Ohio, and Miss Bonnie Stout, of Greenspring, Ohio; were married at Tiffin, Ohio, July 19. They are spending a few weeks in Greenspring, and will reside in Cleveland.

J. M. Adams, secretary and general manager of the Iron-clay Brick Co., and W. H. Hoagland, general manager of the Claycraft Brick Co., of Columbus, have arranged to attend the called meeting of the board of directors of the American Face Brick Manufacturers' Association at Niagara Falls, August 1 and 2.

R. R. Lambert, aged 61 years, a well known brick manufacturer in the Pittsburgh district, operating under the firm name of R. R. Lambert Co., is dead. He was prominent in political circles on the North Side (old Allegheny, Pa.), and

had served two terms as a member of the Board of Education of the Tenth Ward.

W. L. Cremers, sales manager for the R. B. Tyler Co., Louisville, Ky., has been on a vacation in Connecticut for several weeks past, but is expected back late this month. The company has been busy with brick sales, and general lines, and has been doing a large volume of business in connection with its road department.

T. E. Wilson, president of the Pittsburgh (Pa.) Clay Products Co., has just returned from a business trip to Detroit. He was impressed by the extensive building operations in that city, where whole streets are being laid out at a time, and has come back confident that activities like that springing up under the impetus of "boom" conditions make it impossible for brick prices to come down before fall, if then.

J. D. Burgess has been made president of the Pittsburgh (Pa.) Brick Co. He succeeds his brother, George L. Burgess, who is now in business in New York. At the same time Herbert Hunzeker, formerly attached to the courts in Pittsburgh, has been made secretary of the company, and William I. Salsgiver, lately engaged in the real estate business, has become treasurer. Mr. Hunzeker succeeds J. J. O'Reilly, who resigned to enter the T. A. O'Leary Co., also of Pittsburgh, and Mr. Salsgiver takes the place of Miss Burgess, who died last fall.

Louis V. Halberstadt, manager of the Reading (Pa.) Shale Brick Co.; Frank S. Gery, of the Glen-Gery Shale Brick Co., Reading, Pa., and Mr. Bieber, a Kutztown, Pa., brick manufacturer, attended the monthly meeting of the Brick Manufacturers' Association of Eastern Pennsylvania, Southern New Jersey and Delaware, recently held in Allentown, Pa. The brick manufacturers of Lehigh County, acted well as hosts and tendered a dinner to the delegates in attendance at Shankweiler's Hotel, Guthsville, Pa. After the sessions the delegates were shown thru one of the largest deer reserve parks in America—owned by Colonel Trexler, a well known capitalist, who is interested in cement manufacture in the Lehigh Valley.

Alabama

The Childersburg (Ala.) Brick Co. has been formed with a capital stock of \$10,000.

Joseph Lautner and Henning Simonson will build a brick plant at Florence, Ala., which will have a possible capacity of 20,000 building brick per day.

Arkansas

At Helena, Ark., the Sisters of Nazareth will erect a four-story hospital.

The Farmers Bank & Trust Co., at Blytheville, Ark., will erect a new banking house. A new court house is also to be erected at Blytheville.

Quotations and information on brick and tilemaking machinery and small brick yard accessories and equipment is being sought by Lilliard & Smith, of Lester, Ark.

The courthouse at Marianna, Ark., is to be remodeled at

a cost of \$10,000. W. S. McClintock, of Marianna, Ark., will erect a new brick business block.

Little Rock, Ark., reports good building activity. The Fischer Lime & Cement Co., of Little Rock and Memphis, reports good demand on brick and sewer pipe with stronger market. They contemplate certain changes with their Little Rock branch to be announced next month.

Wilson, Ark., has let a contract for a large new high school this summer. The First Baptist Church, of England, Ark., will erect a new \$12,000 building. The Cleburne Hotel, at Helena, Ark., will erect an addition to cost \$60,000. At Conway, Ark., a new Presbyterian Church, to cost about \$40,000, will be erected.

California

J. T. Roberts, of the Stockton (Cal.) Fire & Enamel Brick Co., is spending the greater part of July at the Feather River Inn, enjoying his annual outing.

Plans are now in preparation by Architect E. E. Young for a five-story and basement brick apartment house to be erected in Stockton Street near Bush, San Francisco, Cal., for H. H. Helbush at a cost of about \$55,000.

Architect Edward T. Foulkes, of San Francisco, is taking figures for the construction of a one-story brick garage to be erected on South J Street, Fresno, Cal., at an estimated cost of \$12,000.

Contract has been awarded H. M. Frosthoin of Oakland, Cal., for the construction work on a one-story brick store building to be erected on the south side of Fifteenth Street near Broadway. The cost of the structure will be \$18,000.

The contract for the construction work on a new hollow tile, frame and plaster residence to be erected at Atherton, Cal., for Cutler Bonestill at a cost of \$25,000, was awarded to W. C. Duncan & Co., of San Francisco. A. G. Headman was supervising architect for the structure.

Plans are being prepared and building permits requested for eight two-story houses to be erected in Mandana Boulevard, Oakland, Cal., by Architect A. W. Smith of that city. The houses are to cost from \$3,000 to \$3,500 each and will contain magnesite floors in the bathrooms.

In Southern California, according to all reports, the clay products industry is in fine condition. Improvements are constantly going forward at the various factories and the shipments of raw products of the fields in the southern part of the state are steadily growing in volume.

Each week a larger percentage of jobs being figured upon in the architects' offices are coming out for contract. The total value of building permits in San Francisco continues to grow steadily and the allied building trades are bending every effort to co-operate in order to bring about a more settled condition.

Plans are now under way for a hollow tile and stucco passenger depot, to be located at 2nd and E Streets, Maryville, Cal., at an estimated cost of \$15,000. This is under the direction of E. C. Hemmings, architect, and is to adjoin the new \$25,000 freight depot. Bids for both buildings will be taken shortly.

According to reports from a San Francisco fire brick concern, this year's business is averaging from 60 to 75 per cent. of that of 1918. Much of the work connected with Government requirements was shut down as soon as the armistice was declared and the above mentioned percentage is considered a fair volume for present conditions.

Reconstruction work on the Alameda plant of N. Clark & Sons is going steadily forward. The large dryer building is about completed and the management states that the com-

pany expects to be ready for normal operation early this fall. This firm is furnishing the architectural terra cotta for use on the new administration building at the Chevrolet motor car plant in Fruitvale, Cal. George Kelham was the architect for the structure.

The Philadelphia Quartz Co. has purchased land near Ione, Amador County, Cal., belonging to William Amick, on which there is an unlimited supply of sand and clay. About 25 men are employed by the company which has had the mine in operation for about eight months now. A short time ago machinery used in separating sand from clay was installed and improved and carloads of the raw materials are leaving Ione daily.

The McNear Brick Co. is planning to resume operations at its plant in San Rafael, Cal., by the first of August. W. W. Dennis, manager of the company states that labor difficulties are just as keen now as they were during the period of the war. It is necessary to pay workmen practically whatever they demand in order to secure competent crews and Mr. Dennis agrees with the statements given out by many other members of the trade—that while such a situation prevails, it is almost ridiculous to talk of reduction in the cost of the finished product.

There is more real activity reported in the clay products industry this month than any during the past year. New factories, warehouses and other types of commercial building are going up all over the state, while in San Francisco itself, the number of new contracts for apartment houses, offices and commercial buildings is growing daily. Many extensions to factories already in operation are being added, for in nearly every line of production there is a demand greater than the present facilities can handle. Brick is being used extensively in commercial building of many types as it is apparent that the building public is about convinced that prices will not drop. There is every indication, in fact, that many building commodities will increase in price. A further advance in lumber is expected by the first of September, perhaps sooner, and an agitation is now on foot among local dealers to advance the price of common brick from the present schedule of \$12.50 per thousand, f. o. b. San Francisco, to \$14.00.

Delaware

A strike of union carpenters at Wilmington, Del., has worked to handicap construction activities during the early weeks of July. The controversy has now been settled and the men have returned to work. An increase in wage scale of five cents an hour has been granted, making the price at the present time 75 cents an hour. The men originally asked 85 cents.

The prices of brick and burned clay products of all kinds show no fluctuation at Wilmington. Present levels are very firm, and there is no evidence of lower figures. Common brick is selling for about \$20, delivered on the job, and is operating under fair demand. Clay partition tile is ranging around \$100 to \$120 per thousand. Face brick is selling at from \$34 to \$44 per thousand, with lighter shades in more active call; the average price for first grade material of this nature is about \$42.

The Charles Warner Co., Wilmington, Del., dealer in mason's materials, is doing its usual good business. This company is one of the largest concerns in this line thruout the Wilmington district, and is known in neighboring cities, such as Philadelphia, as well. The company manufactures certain materials, in connection with the handling of such products as hollow building tile, fire brick, face brick, partition tile, etc. A number of motor trucks are operated from

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"I received your Red color and have made about 100,000 fine red brick, and am putting up my first building. Everyone pronounces it the best looking wall in town."

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Freight Rates on all R.R.'s in UNITED STATES and CANADA

A Trial Shipment Will Convince You. Write Us

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Aerial Tramways For Economical Haulage

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the yard, providing for deliveries of materials at remote points. At the present time the company is quite active in road construction work. No labor difficulties have been experienced at the yard, and the men now employed are old hands with the company.

Construction work is not moving any too rapidly at Wilmington, Del., and vicinity to suit the local mason material dealers or other building interests. The bulk of work at the moment is centered in housing, and this character of construction in the wide average does not usually run into very high figures. At the same time the outlook is good, particularly if one considers the activity in realty circles as a forerunner of what is to come in the matter of new buildings. The real estate people are busy; there is an active call for purchases and rentals, and there is sort of a little boom in suburban real estate. Numerous properties are changing hands, and a number of interesting sales are recorded. A review of the records of the local building department, however, do not show any great cause for constant complaint; the month of June indicates an increase of about 43 per cent. over the total for the corresponding period of a year ago. The total valuation of plans filed for construction in this time reached \$649,889; the aggregate for June, 1918, was \$452,484.

Georgia

William W. Nace and his associates have formed the Nace Brick Co., at Moultrie, Ga., with a capital stock of \$7,500.

S. P. Hollingsworth and W. T. Daley have formed the Hollingsworth Brick Co., at Atlanta, Ga., with a capital stock of \$75,000.

Illinois

According to Frank C. Layer, of the Builders Brick Co., Chicago Heights, Ill., business is only half normal.

The Lacon (Ill.) Clay & Coal Co., according to V. H. Cartwright, manager, has made improvements which will double the capacity of the plant.

E. M. Durland, of the McEwing & Thomas Clay Products Co., St. Elmo, Ill., states that business was never better. The plant is working to capacity but bad weather handicapped it for the first few months of the season.

The Streator (Ill.) Brick Co. reports a very good demand for their product, but the company is experiencing considerable difficulty in securing cars. E. F. Plumb, of the Streator company, states that the local advertising campaign tending to promote the veneering of old frame buildings with face brick, which the company carried on, has brought good results. This company is working hand-in-hand with the American Face Brick Association in an effort to increase the market for its products.

M. Heckard & Sons, Canton, Ill., reports that business is good. "The plant is running full capacity," writes John M. Heckard, "but we do not get many brick ahead." This concern has made a good record, considering the unrest in labor, having the same men in the manufacturing gang that they started with on March 10, with the exception of one man; in the setting gang one man quit, but the burners and firemen are all the same. Several brick homes are now being built in Canton and two large business blocks. Common brick are selling for \$12 delivered.

W. H. Brosman, president for twelve years of the Albion (Ill.) Brick Co., has taken over the active management, including sales, of the concern. Lloyd Bassett has been promoted to superintendent. The concern is enjoying a very good business and has recently equipped part of its machinery

with electricity and extended its yard by building new kilns. It is planned to rebuild the old kilns and put in additional new ones this season. The Albion Brick Co. is doing some local advertising, at the same time improving the quality of its ware.

As this issue is ready to go to press, Chicago's building tieup still remains on. These are strenuous times for the building industry of Chicago with an apparent opening of a busy building season. The carpenters recently made a demand for one dollar an hour—an increase of twenty cents per hour over former wages. This increase was refused by the Carpenter Contractors' Association, who maintained that this increase was all out of proportion to wages received by other trades or by the same trade compared with wages paid in other cities. They offered a wage of 92½ cents an hour which was refused by the carpenters' union. As a result of this the Building Construction Employers' Association arranged for a lockout of all building trades until all of them had reached an amicable solution of their wage demands. The effect of this order was a tieup of millions of dollars' worth of building and unemployment of over 100,000 men. The latest reports indicate that the union committees which have been meeting with the employers will tell the carpenters they cannot get the \$1 an hour they are after and to accept the 92½ cents offered and thereby allow all building tradesmen to return to work.

Indiana

A new brick hotel and store building is to be erected at 1416-1418 Washington Street, Gary, Ind., for the Guarantee Building & Construction Co. The structure will be two stories high and will cost about \$30,000.

A handsome new apartment building, to be faced with brick, is to be erected at Meridian and Vermont Streets, in Indianapolis, Ind., for the E. G. Spink Co. The building will contain 121 apartments and will be eight stories high.

William Patterson, one of the officials of the Elkhart Carriage & Motor Car Co., is erecting a new \$12,000 residence at Strong Avenue and Vine Street, Elkhart, Ind. The house will be built of brick and will be topped with a tile roof.

Work was started recently on two new additions to the plant of the Loogootee (Ind.) Face Brick & Tile Co. The new structures will be pushed to rapid completion so that the installation of new machinery and equipment can be made in September.

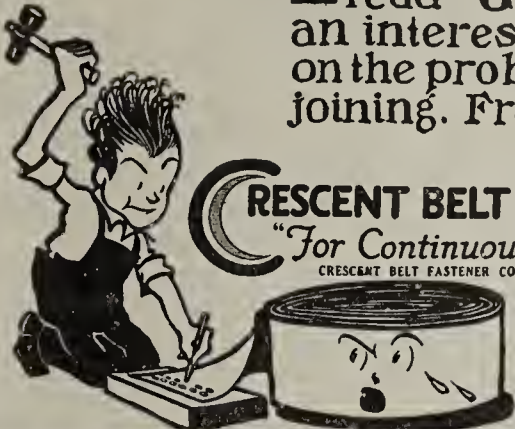
All records for building operations in Indianapolis were broken during the month of June, according to figures given out by J. C. Hayes, chief clerk in the city building commissioner's office. Eight hundred and four permits for new buildings and alterations were issued during the month, the total valuation of the improvements being listed at \$1,044,260.

Building permits for the construction of new residences and the remodeling of old dwellings to the value of \$166,698 were issued during the month of June at Fort Wayne, Ind., according to figures compiled by Gustave Lindeman, building commissioner. These figures show that building operations have increased 100 per cent. over the same period of 1918.

Sixty-five building permits were issued at Richmond, Ind., during the month of June on property valuations of approximately \$46,225, according to the report of John Pinnick, city building commissioner. Building operations at Richmond have been booming since early in the spring and the prospects for a continuation of this condition thruout the rest of the year are excellent.

The Terre Haute (Ind.) Vitri-fied Brick Co., of which

If this is what happens to your belting read "Gone Again" an interesting booklet on the problem of belt joining. Free, of course.



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"For Continuous Production"
CRESCENT BELT FASTENER CO. 381 Fourth Avenue, New York, N.Y.

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We are ready to offer you facts and figures to prove that the Cyclone Drill will soon pay for itself.

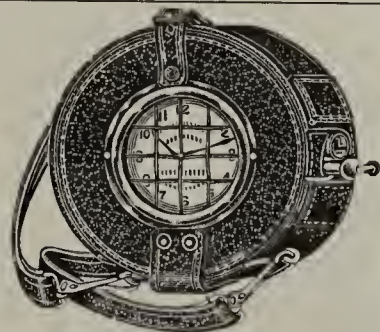
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FIRE PREVENT Vandalism By equipping your watchman and burners with a HARDINGE Watch Clock



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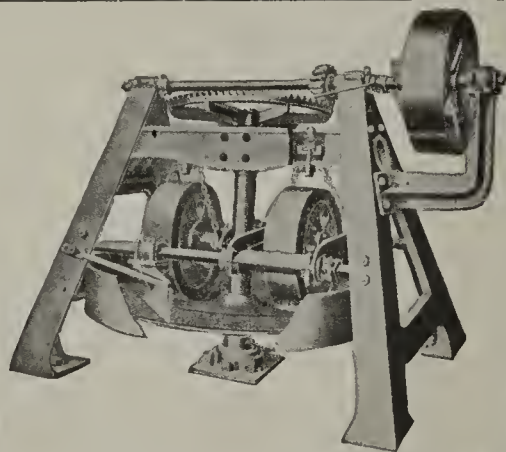
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TANKS
AND
TOWERS

THE EAGLE DRY PAN



Write for Prices

EAGLE IRON WORKS DES MOINES IOWA

James A. Hoskins is manager, is furnishing the brick that is being used in the resurfacing of Wabash Avenue in that city. When the street is completed it will be one of the best in the city, according to officials of the brick company, members of the board of public works and the city civil engineering department.

A petition was filed recently with the auditor of Huntington County for the improvement under the county road law of seven entrances to the city of Huntington, Ind., with brick pavements. August 4 has been set as the date for the presentation of the petition to the county commissioners. Some of the roads mentioned in the petition probably will be designated as state roads and if that is the case the petition in part probably will be denied.

Iowa

C. C. Carhart, of the Sheffield (Iowa) Brick & Tile Co., who was elected president of the Permanent Buildings Society at the annual meeting, reports that his new plant will start operations very shortly. Mr. Carhart states that he anticipates no trouble in securing ample labor at Sheffield to operate both his plants.

July is usually considered a dull month for the Iowa clay producers but this year it is an entirely different story. There is hardly a plant in the state which is not far behind with orders. The labor condition is still acute and some plants have been advertising in the daily papers for help almost continuously for the past several weeks. There is evidence however, during the past ten days of an improvement in the labor situation.

Kentucky

Prices of brick in Louisville are slightly stronger than they were and are being well maintained. The quotations on a delivered basis show face brick, \$19; hard brick, \$15; light face, \$16; soft salmon, for interior, \$9 per thousand.

Brick plants out in the state of Kentucky are doing a much better business as a whole, it being reported that the plants of the Lexington Brick Works and the Barbourville Brick Manufacturing Co. are now running at full time and capacity.

Houston Fairleigh, of the Louisville (Ky.) Builders Supply Co., has managed to keep the brick and general supply departments of that concern humping along at a good gait. A. E. Livingston is out around town a great deal, and the pair represents a combination of real business getters.

Business with the Southern Brick & Tile Co., Louisville, Ky., has been much more active during the past two weeks than it was, with prospects for a good year from now on. Between manufacturing tile for winter use, and brick for immediate use the company is managing to keep things going nicely.

The Progress Press Brick Co., Louisville, Ky., has closed several pending contracts, one being for a half million brick on the new Adler organ plant, and another for 300,000 on the Kentucky Creameries plant. Orders for 600,000 in small lots of 30,000 to 80,000 have been received lately, and the plant is again running full.

James Howington, of the Coral Ridge Clay Products Co., Louisville, Ky., reports that his plant started on a full time basis on July 1, after having been operating on about half time for the greater part of the year. Mr. Howington reports that demand as a whole is much better than it has been since the signing of the armistice.

The Louisville Board of Trade is backing the "Buy a Home" movement, which has been launched by about thirty

organizations representing the general building, supply and labor interests. The Board of Trade was appealed to for assistance and support, following a get-to-gether meeting of the various interests.

At the Louisville plant of the Louisville Fire Brick Works there has been a nice increase in business, and after several dull months things are humming along again in very fair shape, there having been an increased demand for fire brick from several industries. K. B. Grahn has been up to the Carter County plant for several days, and Sales Manager Bell has been in Washington for a week.

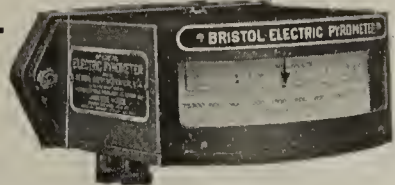
The P. Bannon Pipe Co., Louisville, Ky., has been making some common and face brick in its hollow tile plant on Magnolia Avenue this year, during the lull in hollow tile demand, but has been operating the plant full. The sewer pipe plant on Fifteenth Street has been so busy this year that it has not burned any salt glazed face brick, such as it started making about four years ago.

From reports received from Louisville brick manufacturers and jobbers it would seem as tho there is a much better demand for all grades of brick than there was in June, and that local consumption is much better than it has been at any time since before the war. Every plant in the city is now in operation, and apparently good and busy. The demand is steadily picking up, many new contracts are being let, and from all indications business will be active until cold weather at least.

The one disturbing factor in the brick industry in Louisville, Ky., is the labor situation. There is enough labor to go around, but prices are high, and labor is uneasy. Half a dozen strikes have gained momentum, and there is now danger of a general strike, which would throw out the carpenters and bricklayers, and stop construction generally. Printers, bakers, clothing workers, electricians, and telephone workers are out, and the labor leaders have been threatening a general strike to force the hand of employers.

City Engineer A. Boerner, of Paris, Ky., has asked for prices and names of manufacturers of vitrified paving brick, plans being under consideration for construction of some brick streets in that city, altho the material to be used has not been decided upon. Brick streets are also being discussed for Richmond, Ky., which is represented by S. F. Crecelius, an engineer of Louisville. A great deal of street work is being figured on in Louisville and country towns of the state, with country towns interested in brick. Louisville has gone on record as being opposed to the use of brick except for gutters.

An interesting case was recently in the court of Judge Samuel B. Kirby, Louisville, Ky., in which John Rademaker and D. L. Cain filed an injunction against Building Inspector W. E. Glossop to prevent the latter from interfering with the construction of a chimney in a residence on Western Parkway. This chimney was of tile, and enclosed on four sides with four inches of brick. The building inspector, before issuing the permit, noted the fact on the permit that the chimney would have to be enlarged to eight inches of brick and cement on four sides. Rademaker built the chimney according to original plans, and took out his injunction papers when notified that the permit would be rescinded unless he made the chimney conform. Judge Kirby overruled the motion of Rademaker, stating that the ordinance was so plain that anyone with ordinary knowledge of English could figure it in but one way. Judge Kirby in his decision stated that the law must be complied with as it was written, altho he was sorry that it would cause Rademaker additional expense. One brick man in discussing the decision said:



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For Indicating and Recording are particularly adapted to high sustained temperatures, where the value of entire burns are dependent on correct readings.

They measure up to the high standard maintained by Bristol's Instruments for over a quarter of a century.

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When it comes to a question of economy of fuel and uniformity of finished product, I acknowledge no superiors in handling the burning end of the game.

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Pyrometer-Expert and Kiln Specialist.

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On September 7, 1916, we shipped some of our No. 18 Union Steel Chain Belting, which operates on standard No. 88 sprockets, to the Haviland Clay Works, Haviland, Ohio. On March 5, 1919, we shipped them new pins for this chain, and have just received their letter, stating:

"We received the pins and cotters, and after re-pinning the chain, in use so many months, it gives as good service as ever. Your chain fills our needs exactly."

Write us for details which show how these Trouble Proof chains can fill your needs exactly.

THE UNION CHAIN & MFG. CO. Seville, Ohio

"HERCULES" (RED STRAND) WIRE ROPE

(REG. U.S. PAT. OFF.)

Its Strength and toughness
make it durable, safe
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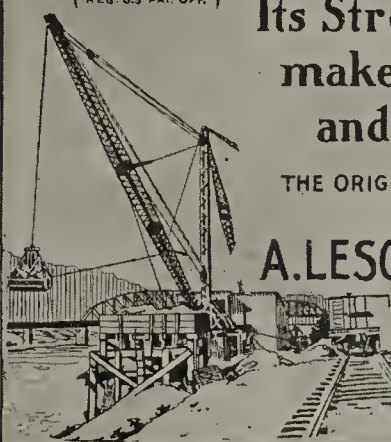
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ELEVATING, CONVEYING, POWER TRANSMITTING MACHINERY

Bucket Elevators, Buckets, Boots, Steel Elevator Casings, Belt Conveyors, Screw Conveyors, Cable Conveyors, Gears, Pulleys, Sprockets, Chain Bearings, Shafting, Screens.

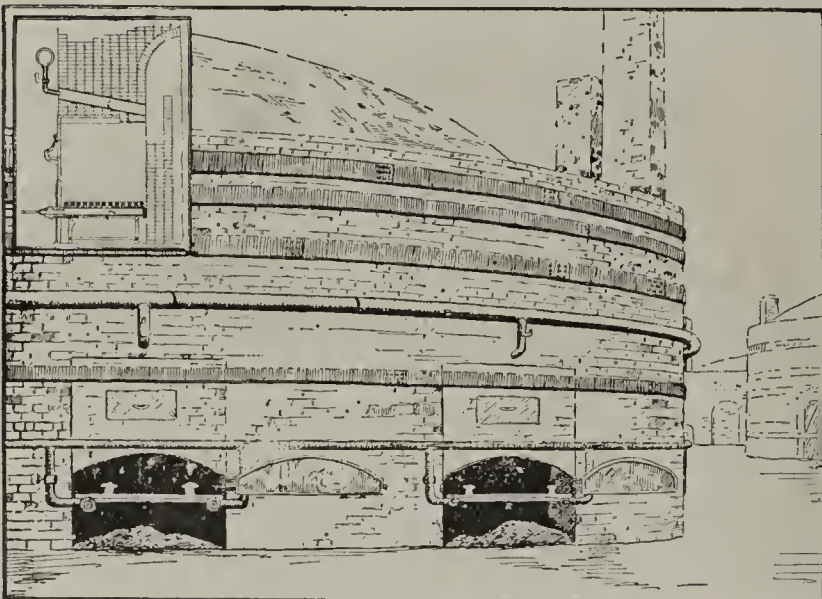
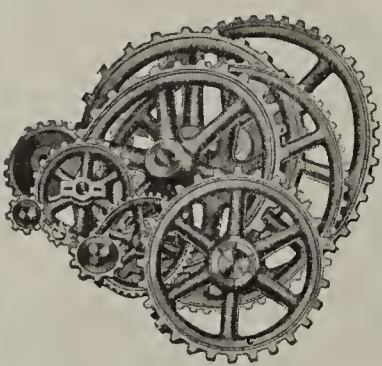
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Saves Time—Saves Fuel—Saves Labor.

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| 1—Practically Smokeless. | 4—Ability to burn any kind of coal economically. |
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Extract from letter of Mayor Switzer of Dayton, who has the FURNACE GAS-PRODUCER installed under boilers at his factory.

"We believe that you have a good grate and trust that you will be as successful in future installations as you were in this one."

We are installing the Furnace Gas Producer Method for The Crescent Refractories Co., Curwensville, Pa. Ask them. Write for complete data and information.

FURNACE GAS-PRODUCER CO.

J. T. UNDERWOOD, General Manager
DAYTON Makers of "NOSMO" Products OHIO

"Judge Kirby was absolutely right, no chimney should be of less than eight inches, and twelve would result in a greater degree of safety, and fewer fires in intensive firing periods from overheated flues."

Mississippi

The Columbus (Miss.) Brick Co. reports good activity in their portion of the state, and the plant is running full capacity.

Charleston, Miss., is active in construction work. A modern high school, to cost \$75,000, is being built, and a brick and tile company is putting in a \$10,000 plant.

Michigan

That Detroit's building total for 1919 will far exceed that of 1916, the banner year, is indicated by figures for the first six months, compiled by John McCabe, of the city department of buildings. The compilation shows that 16,489 permits for new buildings, alterations and additions were issued during 1916, at an estimated cost of \$51,068,310. Of this total 7,218, at a cost of \$21,712,760, were issued during the first six months of the year. The first six months of 1919 show 8,821 permits, at an estimated construction cost of \$23,561,841.

Maryland

Building contracts let by the Porcelain Enamel & Mfg. Co., O'Donnell and Eighth Streets, Baltimore, provide for the immediate erection of the proposed one-story plant addition, to be used for increased plant facilities. The extension will cost about \$15,000. The company specializes in the manufacture of different porcelain specialties. Heinrich Turk is president and general manager; William G. Boyce is secretary and treasurer.

At Cumberland, Md., there is quite a little activity in realty lines at this time. The project of the Kelly-Springfield Tire Co., Akron, Ohio, covering the erection of a large local manufacturing plant to cost in excess of \$500,000, is seemingly giving an impetus to things, for the movement towards new construction is rapidly making headway. In connection with the proposed tire manufacturing plant, a large housing development is planned, and a local organization is being formed to handle this feature of the project. The West Cumberland Housing Co., recently organized, is planning for the erection of a large number of new homes in the vicinity of Amcelle.

There is no change of moment in the price of building brick or other important construction products in the Baltimore district. Common brick is in fine call, as is also face brick and other burned clay products. Good hard common stock is selling at about \$14 per thousand, with tendency towards a slight advance. A good face brick can be obtained for from \$36 to \$40 per thousand, with other varieties, such as ordinary red, as low as \$19 and \$20 per thousand. With fractional fluctuations of standard building materials as now evidenced so frequently, it seems likely that prices locally will advance a little within a comparatively short time. One thing sure, the demand for basic materials is certainly not wanting.

David B. Reckord, East Fayette Street, Baltimore, dealing in high grade face brick, reports business as being very good at the present time. This concern is furnishing brick for a number of important projects in this section, including material for the new housing development in the Roland Park section. The demand has been particularly heavy for

a number of popular varieties, for instance, on a single apartment house job, a total of about 250,000 brick were supplied recently. The company is quoting red face brick at a price of \$19 per thousand at the present time, and on what is known locally as Spring Garden Colonial brick, \$24 per thousand. No repressed Colonial brick is available at this writing and former quotations have been withdrawn.

Among the notable projects developing at Baltimore in construction circles may be noted the seven two-story brick residences to be erected by the Welsh Construction Co. at Moreland and Ruxton Avenues; a brick residence to cost \$25,000 will be constructed by P. W. Knefely, on Charles Street, near Twenty-ninth Street; a seven-story brick apartment house to cost \$500,000 will be erected by the Abel Building Co. at Thirty-fourth and Charles Street. Brick is a very popular material in this section, and being produced locally, offers economy in cost with every well known advantage in service. In connection with local building operations, a little blot is appearing in the harmony of things thru the demands of carpenters to be made at an early date for a wage schedule of 90 cents an hour, an increase of 10 per cent. over the prevailing rate.

Building construction continues at a good pace in the Baltimore district; there is considerable work in progress, and considerable work in prospect, and as activities unfold from day to day, the positive intent is apparent that building operations are going to move in the right direction from now on; the impetus to big things is there. Housing work holds the center of the stage in this section. The demand is for homes—homes of any type and any style, and there are but few selections to be made these days. Industrial work, too, is not by any means backward, and there is interesting activity in this branch of construction. To show that things are moving in the right direction, the month of June produced a total of 1,427 building permits with total valuation of work placed at \$4,282,075, as compared with an aggregate of \$3,011,126 for the corresponding month of 1918; this is a gain of over 40 per cent.

Missouri

E. W. Stephens, of Jefferson City, Mo., is receiving sealed bids for the construction of walks and drives upon the Capitol grounds.

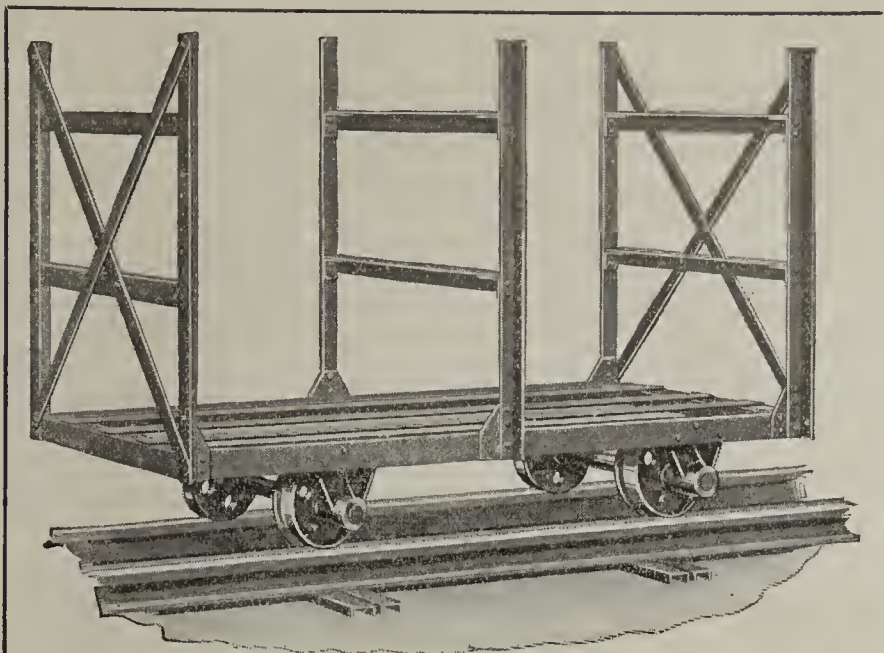
J. C. Settle & Co. will erect a two-story brick factory for the Parker-Russell Mining & Mfg. Co., at 3330 Morganford Road, St. Louis. More than \$25,000 worth of work is involved.

Thomas Bidwell, of St. Louis, has been awarded a contract to erect three, two-story dwellings for W. K. Richardson at 5036 Nottingham Avenue, at a cost of \$102,000. All will be of brick.

James A. Godfrey, of St. Louis, Mo., will erect a \$150,000 brick warehouse for the Standard Sewing Machine Co. at 4140 Forest Park Boulevard. The building will be six stories and be fireproof. Work will start within a few weeks.

The Fruin-Colnon Construction Co., St. Louis, Mo., will erect five buildings, including office, store, foundry and shop buildings at Elizabeth and Hooper Avenues for the Bowman Realty & Bonding Co. Work will not begin for several weeks.

Hartman & Schuerman Construction Co., St. Louis, Mo., has been awarded the contracts to erect a four-story addition to the Washington Avenue home of the Ely & Walker Dry Goods Co. It will front on Sixteenth Street and will



Individual Service on Dryer Cars

Let us know your requirements
—let one of our engineers
come and help you to plan the
style of car that will best suit
your needs. We know how.

H. D. Conkey & Company
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DOES YOUR PROFIT GO UP IN SMOKE?

Canton Rocking and Dumping Grates in your plant mean a large saving in fuel, or a greatly increased production with the same amount of fuel.

By improving combustion, they make a coal saving of at least 10% in comparison with stationary grates. Peak loads can be maintained easily.

If you are interested in cutting down fuel cost and improving combustion, write for Bulletin B, Form 14.

Canton Grate Co.,
1706 Woodland Ave., N. W.
CANTON OHIO

**CANTON GRATES SAVE FUEL
FOR BOILERS FOR KILNS**

Perforated Steel Screens Of Every Description

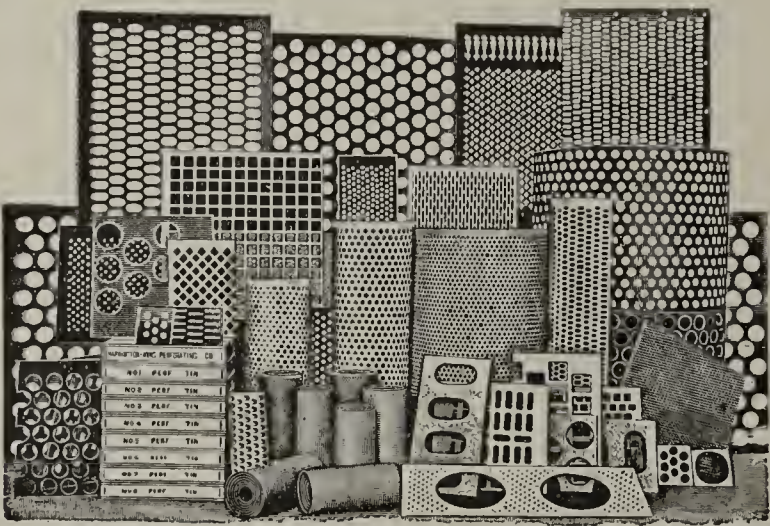
**For Screening Clay, Shale, Sand,
Gravel, Stone and Cement**

No Other Screens Will Give You Equal Capacity,
Durability and Satisfaction

The Harrington & King Perforating Co.

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You won't have to worry about competition
if you treat your clay with

R. H. Precipitated Carbonate of Barytes

You can safely guarantee that your brick
will be

Scum-Proof

You can get a higher price and influence
architects to specify your product because
Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's de-
pendable.

*We have a complete line
of high grade chemicals
for the clay industry*

**The Roessler & Hasslacher
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Boston, Mass. New Orleans, La.
Cincinnati, O.

be of brick. The contract calls for almost \$60,000 worth of work.

The Eyerman Construction Co., of St. Louis, Mo., has been awarded contracts by the Board of Public Service to pave with vitrified brick Elizabeth Avenue, from Cooper Street to Edwards Avenue, at \$10,788; Milentz Avenue, from Prints Street to Gravois Avenue, at \$8,513; Christ Street, from Eichelberger to Wilcox Street, at \$10,147.

A contract to erect a powerhouse, 30 by 50 feet, a three-story factory building, clubhouse, assembly and kitchen, at Charleston, Ill., has been awarded to the Murch Brothers Construction Co. of St. Louis by the Brown Shoe Co. The buildings, all of which will be of brick, will represent an investment of about \$100,000.

The Reliance Brick Co., Kansas City, Mo., has been furnishing brick for an exceedingly large apartment hotel in an exclusive residence district. The hotel is patterned after St. Joseph's Hospital here, which was built in the form of a cross, so as to make every room an outside room. This hotel is now nearing completion. The Eadie Building Supply Co. furnished the materials.

Plants engaged in the manufacture of hollow tile in St. Louis, Mo., report a very large sale of this product, particularly to rural districts. Only a small percentage of this product is sold locally, however. The building code of St. Louis prohibits the use of hollow tile as the principal building material, but in suburbs outside the city limits the use of it is extensive.

Prices have remained practically at a standstill in Kansas City, Mo., and it is extremely unlikely that there will be any change in the standard for some time to come. Building has increased in this city during the past month tremendously, and the specifications of nearly every structure now under process of erection and those which soon will be, call for brick as the staple building material.

The paving brick manufacturers in the Kansas City territory have been exceedingly busy during the past few weeks, according to G. W. Thurston, secretary of the Western Paving Brick Manufacturers' Association, with offices at Kansas City. The plants have been running almost to capacity during the entire spring and summer. The labor problem has affected the operations to some extent, but it is thought that this situation will adjust itself within a short time.

St. Louis manufacturers of building supplies and particularly those of brick and other clay products, report more active business at this time than for almost two years. While conditions are not at their best, virtually all of them declare their sales are sufficient to keep every department working to the last minute, and while factories are not working at fullest capacity, many manufacturers prefer it so and believe that these conditions will prevail for many months where a decided boom would result in a subsequent depression.

The Skrainka Construction Co., of St. Louis, Mo., has been awarded a contract by the Board of Public Service to pave Milentz Avenue, from Gravois Avenue to King's Highway, with vitrified brick at a price of \$24,516. The same company was awarded contracts to pave Hancock Avenue, from McCausland Avenue to the right-of-way of the St. Louis-San Francisco Railway, at \$6,750; Rosa Avenue, from King's Highway to Brannon Street, at \$6,750, and Prather Street, from Manchester Avenue to Mitchell Street, at \$29,965—all of vitrified brick.

To street building in St. Louis, Mo., manufacturers attribute a large increase in the sale of vitrified brick which

is becoming more popular and is being used in many cases, to replace macadam and wood blocks. Enamelled tile is another product that has taken a spurt, manufacturers say. It is being used extensively in building in St. Louis. Several large projects, including two proposed natatoriums, which will be constructed mainly of enamelled tile, are about to be launched. A number of small towns, both in Missouri and Illinois, have made appropriations recently that call for the construction of water mains, chiefly of eight-inch pipe and larger, and several St. Louis manufacturers already are at work in an effort to land the supply contracts.

Business at Kansas City during the past two weeks has shown a steady increase in the demand for all brick. There are very few plants at the present time accepting any orders for immediate delivery, and it is almost safe to say that every brick, both face and common, in the yards and in the kilns is sold for some time to come. Plants have been working as close to production as possible. However, it has been with difficulty that the manufacturers have been operating the plants, for the labor situation presents a serious aspect here. It is extremely difficult to secure labor, even tho wages are of a high scale, and it is practically impossible to secure experienced laborers.

The first step of what will result in much business for contractors and manufacturers has been taken in the form of an order by Commissioner of Streets and Sewers Talbert to property owners in the districts on Twelfth Street, from Chouteau Avenue to Hickory Street, and on Eleventh Street west to an alley, to remove their buildings as a part of the project of widening Twelfth Street. The total of 45 buildings of all classes will be razed. The unanimous opinion of St. Louisans familiar with the building situation is that new buildings will be erected on all the sites at once. This territory is in the downtown business district and building will, no doubt, be precipitated by the new street improvement which will result in the central thorofare of St. Louis.

S. J. Hayde, a well known builder of Kansas City, Mo., is now organizing a holding company which will call for the erection of a \$200,000 plant for the mining of shale and the burning of it and mixing with concrete for producing the trade-marked composition of "Haydite." For some little time there has been mined and burned a clay aggregate in Kansas City which combined with cement has been used as the basic material in the concrete ships built by the Government. This composition also has been used by the Joseph B. Strauss Co., builders of the concrete railroad car. The Strauss Co. built the first car by squirting the clay aggregate, which was mixed with cement on a steel reinforced frame by means of a concrete "gun." This car has been subjected to the most severe wrecking tests, and has been declared by railroads to be 50 per cent. stronger than a steel car, and its cost is \$700 less. The weight of the concrete car is 53,560 pounds and liable to reduction.

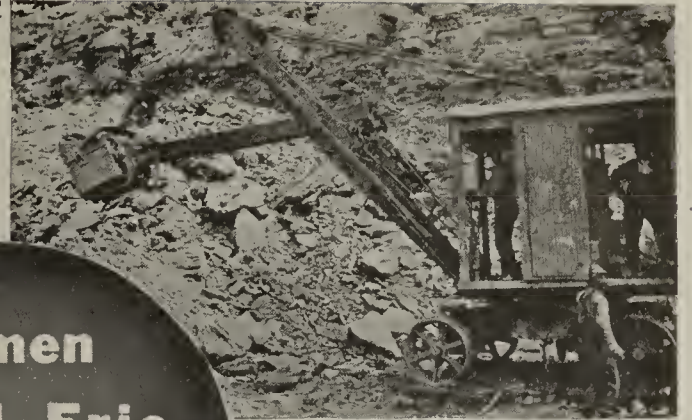
Nebraska

Trausch Brothers, of Roseland, Neb., are reported to have traded their brick yard and plant to the Lincoln Building & Loan Association for land near Burlington county. The valuation of the trade was \$26,000.

New Jersey

Walter Shultz, Hoboken, N. J., well known among the brick manufacturers and mason material dealers in the state, is now interested in a brick yard in the Hackensack district. Production at the plant is expected to aggregate about 4,500,-

The ERIE Shovel is reliable. Built far stronger than the usual standard.



**"3 men
and 1 Erie
provide our
shale"**

"We are tickled to death with our ERIE Shovel—could not run our plant without it. Three men and the ERIE easily give us enough shale to keep the plant supplied—enough for 100,000 brick a day."—D. D. Evans, General Mgr. WEST VIRGINIA PAVING & PRESSED BRICK CO., Huntington, W. Va.



Serves either as steam shovel or as locomotive crane, with clam shell bucket.

The W. Va. Paving & Pressed Brick Co. went into the steam-shovel question very thoroughly before buying their ERIE. They carefully compared different makes of shovels.

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Flexible as a belt Positive as Gears
Longer life than either

Our engineers, experts in the art of designing chain drives, will gladly call and assist in solving any power plant transmission problem without obligation.

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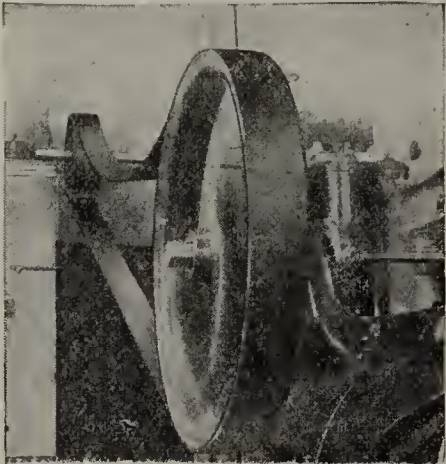
"MORSE" is the guarantee always behind our
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A MARK IN THE ☐ WILL BRING INFORMATION ON

- ☐ Treatment of plain leather belting.
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- ☐ Treatment of Rubber belting.
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At the same time, the Cling-Surface Co. would be glad to have you tell about any drives with which you are now having trouble, diameters of pulleys, speeds of pulleys, thickness of belts, width of belts, distance between centers, kind of belts, etc. The more details you give, and the more accurate your measurements and description, the better we can serve you.

You can try a 25 or 50 lb. tin and if it does not fulfill our claims, it won't cost you a cent. The Cling-Surface may be returned at our expense.



A Slack Cling-Surface Treated Belt in France. Full information on request.

CLING-SURFACE CO.

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SAUERMAN DRAG LINE CABLEWAY EXCAVATOR

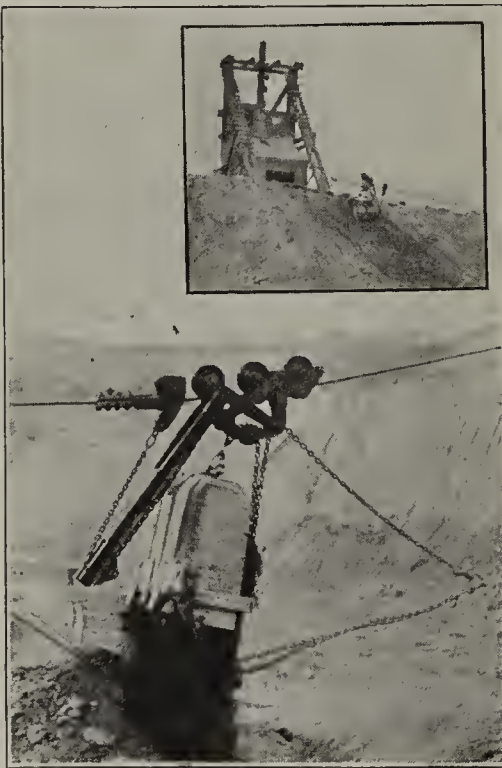
is a one-man machine which connects the clay pit with the plant and digs, conveys and dumps the clay in one continuous operation. It does away with the shoveling gang and the cars, locomotive, track, etc., that are required when other kinds of excavating machines are used.

Here's Example of Economy of Sauerman Outfit in Clay Plant:

The problem confronting one large Ohio brick manufacturer was to find the most economical means of getting the clay from a large hill and delivering to the plant situated in the valley. The method first tried out involved the use of a steam shovel with cars and horses to haul the clay to the plant and required the employment of six to eight men.

The Sauerman outfit which has taken the place of the shovel and cars, digs the clay from the hill and conveys it to a hopper from which a car runs up and down a short incline to the plant. Two men constitute the entire operating force.

The small picture shows the bucket digging a load near the top of the hill. The bucket loads in a few seconds, then the drum carrying the load cable is released by the operator of the double-drum friction hoist on the hill-top and the loaded bucket returns down the track cable by gravity to the hopper 500 ft. away in the valley. The large view shows the quick, sure, automatic dumping action of the bucket.



This low-end dump type of installation has proved to be a perfect solution of this clay-digging problem. Our other type of outfit, dumping at high end of cableway, is equally successful where the clay has to be delivered to a point higher than the place of digging. What is your problem?

Catalog free on request.

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000 brick during the season, and a fine quality of product is being turned out.

Rutgers College, New Brunswick, N. J., which stands high in ceramic work in the state, has opened its summer school with a large number of different courses of study. A good attendance is evidenced and great interest is being shown by students from all parts of the state. George H. Brown, director of the Department of Ceramics at the college, will assist in connection with the course of studies at the School of Industrial Arts, Trenton, commencing with the fall term.

The Independent Brick Co. is maintaining operations at full capacity at its plants at Bordertown, N. J. These yards are thoroly modern in all respects, with labor-saving appliances and mechanical equipment used wherever possible. Good sized orders, it is understood, are being received; the plant specializes in large quantity shipments, and a very high grade common brick is produced. Many thousands of this Bordertown brick were used by the Government at its different cantonments and for other work during the war period.

Things continue to hum in the brick producing centers of New Jersey. At Trenton, Hackensack and in the Raritan River section there is considerable activity. At the first noted city, the Trent Brick Co., Donahoe & Nolan, Joseph N. Applegate and others are engaged in production, with plans for a good season's run. At Hackensack, Little Ferry and vicinity, the Hackensack Brick Co., I. E. Gardner and Henry Gardner are losing no time in making every day count in manufacture, and thousands of brick are leaving this section for nearby parts, usually on motor trucks. The Sayre & Fisher Co. is busy at its plant at Sayreville, near South River.

Trenton, N. J., seems to be enjoying a little building "boom" all its own. One thing sure, new construction work is coming along in a decidedly encouraging manner, and the building department is showing an increasing number of permits issued from week to week. There is considerable industrial work under way, the Hamilton Rubber Co., the Luzerne Rubber Co., the Joseph Stokes Rubber Co., are all building plant extensions, while the Atlas Tire & Rubber Co. has a new plant under construction on Enterprise Avenue to cost close to \$100,000. Rubber manufacture of all kinds is one of the important industries of this city, and runs close to pottery and ceramic production in this respect.

This is the time when brick manufacturers supplying the Northern New Jersey districts will have "to step" to keep pace with demands. Stocks are growing smaller and new material is hard to obtain. At Newark, Jersey City and vicinity there is a threatened shortage, brought about by the strike of the barge captains on the Hudson River lines, and but very little material is coming in. Only one barge load came thru the week of July 14-19. Demands are being made for brick from the Raritan River section, and a little is available; likewise, there is a strong call at the yards of the Hackensack producers. Good brick is needed, and good brick at the present moment is mighty hard to obtain; that's why many are taking what they can get.

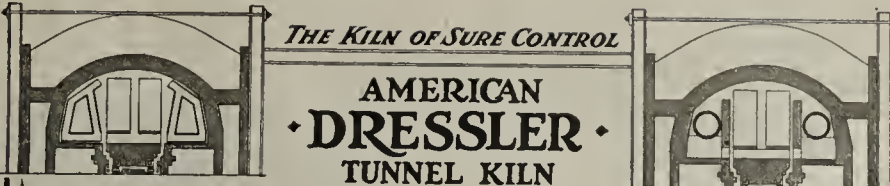
For the first time in more than twenty years, the Bricklayers' Union is now working under a written and signed agreement in the city of Newark, N. J. This is expected to insure construction activities without any labor disputes from this source. The agreement has been made with the General Contractors' Association and will remain in effect until January, 1920. It covers a wage of 87½ cents per hour

to bricklayers up to such time; if, at the first of the year, bricklayers at New York secure an increase over this amount, a like advance is to be made locally; the agreement provides for an eight hour day, with Saturday half holiday; all cutting of material on a job is to be done by the men. This latter clause was inserted to prevent any disputes with other trades. A strike clause has also been made part of the contract.

Abel Hansen, head of the Fords Porcelain Works, Perth Amboy, N. J., manufacturers of fine sanitary wares, is actively interested in a movement for the construction of a canal from Morgan, in the Raritan River section, to Bordentown, near Trenton. Mr. Hansen, with a number of associates, including John Pfeiffer, of Henry Maurer & Sons, manufacturers of fire brick, etc., with works at Maurer, has incorporated the New Jersey Inter-Coastal Canal Association, with this province as the main object of the association. It is hoped to interest all of the ceramic men, as well as those in other lines of industry in this section in the movement, it being held that the building of such a waterway from Raritan Bay to the Delaware River would bring material benefits to the clay manufacturers and others thruout this district. Thomas Brown, state senator from Perth Amboy, is also interested in the new organization. Mr. Hansen is prominent in another new enterprise in this vicinity, being one of the principal incorporators of the Fords Investment Co., with offices at Perth Amboy.

The month of June at Newark, N. J., broke all records since 1912 in the valuation of building permits filed with the city department. The month rounded out with the grand total of \$1,447,435, with 328 permits for work, as against \$579,921 for the corresponding month of 1918. The nearest approach to this record in the term of years noted was in 1916, when the aggregate was \$1,307,541 for 275 permits. These figures show better than any words that building is under way, and with a decided vim. The dominating feature of June building was the applications for new dwellings; no less than 67 houses, 25 of which are brick, were started in this month, with total estimated cost placed at \$529,800; new factories totaled \$226,267. Considering collectively, the new buildings of brick or other fireproof material in this month aggregated \$1,031,117. The first weeks of July are showing like advancement—there is no let-up or signs of let-up; for instance, during the week of July 14 to 19, the valuation of permits reached a point of \$365,862, and during the previous week, \$268,470. The architects are busy, the engineers are busy, and the building contractors, very busy. There is a big demand for brick and other standard building materials thruout this district, including the Oranges, Montclair, Bloomfield, Maplewood and other suburban sections.

There is no change in the prices of common brick, face brick and othed burned clay at different important centers in New Jersey up to the immediate moment, but this is not saying that there isn't going to be. The indications are for a rise in quotations on standard building materials, and clay products, so popular in demand will likely take the upward trend with other basic commodities. Dealers hold that a rise in price must come owing to the high cost of labor and the scarcity of good help—the next few weeks to come will show if this view is correct. Common brick holds at \$19.50 per thousand at Newark, delivered on the job; at Paterson and Passaic, the price is around \$17, with bulk of supply coming from Hackensack; a quotation of about \$15 per thousand obtains at Trenton, while a level of \$18 per thousand for high grade material has been reached at Atlantic City. Face brick is selling for from \$34 to about \$45



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Three Operations in Clay County, Indiana, on Monon R. R. Capacity, 3,000 Tons per day.

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Both burn with long flame, are very low in sulphur, and leave a flaky ash.

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If you are through with yours, send it in, and postage stamps in payment will be forwarded by return mail.

Brick and Clay Record
610 Federal St. Chicago

per thousand, delivered, at Newark, while at Paterson it is running from \$40 to \$50; Trenton dealers are quoting prices from \$35 to about \$44. The demand for face brick is coming along in fine style at these different points, with light colors the more popular. Fire brick is ranging from \$68 to about \$75 per thousand for regular standard grades, with demand as compared with peak periods of the past, easing off a little.

Things are going strong in building circles thruout New Jersey. There is hardly a community that hasn't felt the effects of the movement, and the term "revival" is giving way to direct thought and attention to matters as they are today—not as they used to be. All classes of construction work are being developed with no particular emphasis on any certain phase—industrial buildings, housing, hotel structures, public buildings and so on; "somewhere in Jersey" you will find ground broken for all of these different types of structures. At Trenton and Newark industrial work is rather predominating, and the same holds true of Paterson, a great textile and silk center, and surrounding sections; at Atlantic City, it is hotel buildings that hold the balance of the scale; at Jersey City, it is school buildings; while at other points, dwellings and apartments are being erected without loss of any time. The one blot on the situation is labor—it is not only hard to get and retain, but there is an air of uncertainty as to just how long the men will report from day to day. While there are no strikes of any consequence in the state at the present time among the building trades, yet this is no assurance of a continuance of activities along existing lines; demands are likely to come, and some demands, in justice to good business, cannot be met.

New York

The Mayonne Brick Co. Inc., of Glasco, N. Y., has increased its capital stock from \$4,000 to \$25,000.

The Ostrander Fire Brick Co., of Troy, N. Y., has elected the following officers: president, Franklin A. Ostrander; treasurer, J. W. F. Podmore; secretary, Reuben Rynders, Jr.

The Duffney Brick Co. has commenced operations at the plant of the Mechanicville (N. Y.) Building Brick Co. on Stillwater Avenue. This plant has been shut down for some time.

The American Pottery Corporation, New York, has been incorporated in Delaware with capital of \$2,000,000 to manufacture ceramic products of various kinds. Robert K. Thistle, George V. Reilly and Arthur W. Britton, 65 Cedar Street, New York, are the incorporators.

The One Hundred and Five Lenox Avenue Corporation, New York, has been incorporated with a capital of \$20,000 to deal in brick, burned clay and other building products. H. M. Marks, H. Pearlman and F. Freeman, 816 Eastern Parkway, Brooklyn, are the incorporators.

Announcement is made in New York brick circles that the Worcester (Mass.) Brick Co. is having plans prepared by the Federal Engineering Corporation, Worcester, for a new plant at West Auburn to be used for the manufacture of sewer pipe. The structure will be one story, about 60x100 ft.

The Greenpoint Fire Brick Co., Clay Street, Brooklyn, N. Y., reports a continued demand for fire brick. It is maintained that a good foreign demand can be anticipated for high grade material of this nature, and that as the weeks go by the exports will increase. Both France and Belgium are in need of fire brick for rebuilding their many

industries, and this country will be the main source of supply. The company is now maintaining operations at a good status, and views the outlook for building activities of all kinds in this country with entire confidence. The plant production is of high character. It is maintained that good fire brick is very likely to advance in price, with consideration for labor and other factors entering into manufacture.

If any evidence is needed as regards the big change that has come about during the past few months in building activities in New York it is certainly found in the records of the building departments of the different boroughs. During the first six months of the year, ending June 30, plans for structures to the total valuation of \$106,000,000 have been filed, as compared with \$37,562,598 for the corresponding period of a year ago. In Brooklyn alone, the aggregate valuation of new buildings touches \$44,662,500, leading all other boroughs, as compared with \$17,500,000 for the first half of 1918. In the Borough of Manhattan, the permits for this period total \$35,227,642 in estimated cost; for the same term in 1918, the figures were \$11,939,328. It is currently predicted that the last half of 1919 will show one of the busiest building seasons ever experienced in the Greater city.

The brick plants up the Hudson are progressing in a satisfactory way as regards production. Labor is sort of the deciding factor in this connection, as has been the case for some months past. A number of plants have been able to right conditions to a point that is fairly satisfactory, with the result that manufacture is near to normal at these yards. On the other hand, certain producers still report the situation as a considerable bar to desired activities, with consequence that things are moving slowly. Regardless of the strike of the barge captains for increased wages, brick is being shipped and brick is coming into the New York market. An attitude has been taken by prominent interests that brick should not be increased in price unless absolutely necessary, and there is certainly no excess profits being made in this line at the present time. In truth, rather, a fine spirit of cooperation is being shown.

There is an active demand for brick, both common and face varieties, hollow tile and other burned clay products at New York and vicinity—a demand that is constantly on the increase as the weeks go by. Barge loads of building brick from the Hudson River yards are absorbed almost as quickly as they arrive, and when it comes to actual surplus stocks, there is not very much in this direction at the moment. Brooklyn is drawing heavily on the market, and during the first weeks of July over 22 barge loads have gone to this section. Prices hold firm at \$15 per thousand, wholesale, alongside dock for the best grades. There is no quotation for Raritan section production at the present time and but little material of this character is available. Second-hand brick is in good demand, selling at \$15 per load of 1,500 delivered. There is a tendency towards higher price levels of staple building materials, and brick, at the moment, is one of the essential commodities that is resisting this trend. There is no thought whatever of lower quotations now.

Construction work of all kinds continues at a high point at New York and vicinity; the resumption of building is here, of that there can be no question, and on a large scale, considering the short period of active revival, than ever anticipated by many in the trade. The volume of work under actual construction has reached a prominent level, involving millions and millions of dollars for structures of all kinds. Architects and engineers are busy, extremely so, and projected work is literally flooding many offices. Hous-

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WATERBURY WIRE ROPE

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Made of 6 Strands and a Hemp Core. If a Wire Core and One-eighth to Weight.

Weight	Inches	Fraction of Inch	Weight	Fraction of Inch	Weight	Inches	Fraction of Inch	Weight	Fraction of Inch
1.0	1.0	1/16	1.0	1/16	1.0	1.0	1/16	1.0	1/16
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1.2	1.2	1/16	1.2	1/16	1.2	1.2	1/16	1.2	1/16
1.3	1.3	1/16	1.3	1/16	1.3	1.3	1/16	1.3	1/16
1.4	1.4	1/16	1.4	1/16	1.4	1.4	1/16	1.4	1/16
1.5	1.5	1/16	1.5	1/16	1.5	1.5	1/16	1.5	1/16
1.6	1.6	1/16	1.6	1/16	1.6	1.6	1/16	1.6	1/16
1.7	1.7	1/16	1.7	1/16	1.7	1.7	1/16	1.7	1/16
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7.7	7.7	1/16	7.7	1/16	7.7	7.7	1/16	7.7	1/16
7.8	7.8	1/16	7.8	1/16	7.8	7.8	1/16	7.8	1/16
7.9	7.9	1/16	7.9	1/16	7.9	7.9	1/16	7.9	1/16
8.0	8.0	1/16	8.0	1/16	8.0	8.0	1/16	8.0	1/16
8.1	8.1	1/16	8.1	1/16	8.1	8.1	1/16	8.1	1/16
8.2	8.2	1/16	8.2	1/16	8.2	8.2	1/16	8.2	1/16
8.3	8.3	1/16	8.3	1/16	8.3	8.3	1/16	8.3	1/16
8.4	8.4	1/16	8.4	1/16	8.4	8.4	1/16	8.4	1/16
8.5	8.5	1/16	8.5	1/16	8.5	8.5	1/16	8.5	1/16
8.6	8.6	1/16	8.6	1/16	8.6	8.6	1/16	8.6	1/16
8.7	8.7	1/16	8.7	1/16	8.7	8.7	1/16	8.7	1/16
8.8	8.8	1/16	8.8	1/16	8.8	8.8	1/16	8.8	1/16
8.9	8.9	1/16	8.9	1/16	8.9	8.9	1/16	8.9	1/16
9.0	9.0	1/16	9.0	1/16	9.0	9.0	1/16	9.0	1/16
9.1	9.1	1/16	9.1	1/16	9.1	9.1	1/16	9.1	1/16
9.2	9.2	1/16	9.2	1/16	9.2	9.2	1/16	9.2	1/16
9.3	9.3	1/16	9.3	1/16	9.3	9.3	1/16	9.3	1/16
9.4	9.4	1/16	9.4	1/16	9.4	9.4	1/16	9.4	1/16
9.5	9.5	1/16	9.5	1/16	9.5	9.5	1/16	9.5	1/16
9.6	9.6	1/16	9.6	1/16	9.6	9.6	1/16	9.6	1/16
9.7	9.7	1/16	9.7	1/16	9.7	9.7	1/16	9.7	1/16
9.8	9.8	1/16	9.8	1/16	9.8	9.8	1/16	9.8	1/16
9.9	9.9	1/16	9.9	1/16	9.9	9.9	1/16	9.9	1/16
10.0	10.0	1/16	10.0	1/16	10.0	10.0	1/16	10.0	1/16

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DECIMALS OF AN INCH AND MILLIMETERS FOR EACH 1/16 INCH

Weight	Inches	Fraction of Inch	Weight	Fraction of Inch	Weight	Inches	Fraction of Inch	Weight	Fraction of Inch
1.0	1.0	1/16	1.0	1/16	1.0	1.0	1/16	1.0	1/16
1.1	1.1	1/16	1.1	1/16	1.1	1.1	1/16	1.1	1/16
1.2	1.2	1/16	1.2	1/16	1.2	1.2	1/16	1.2	1/16
1.3	1.3	1/16	1.3	1/16	1.3	1.3	1/16	1.3	1/16
1.4	1.4	1/16	1.4	1/16	1.4	1.4	1/16	1.4	1/16
1.5	1.5	1/16	1.5	1/16	1.5	1.5	1/16	1.5	1/16
1.6	1.6	1/16	1.6	1/16	1.6	1.6	1/16	1.6	1/16
1.7	1.7	1/16	1.7	1/16	1.7	1.7	1/16	1.7	1/16
1.8	1.8	1/16	1.8	1/16	1.8	1.8	1/16	1.8	1/16
1.9	1.9	1/16	1.9	1/16	1.9	1.9	1/16	1.9	1/16
2.0	2.0	1/16	2.0	1/16	2.0	2.0	1/16	2.0	1/16
2.1	2.1	1/16	2.1	1/16	2.1	2.1	1/16	2.1	1/16
2.2	2.2	1/16	2.2	1/16	2.2	2.2	1/16	2.2	1/16
2.3	2.3	1/16	2.3	1/16	2.3	2.3	1/16	2.3	1/16
2.4	2.4	1/16	2.4	1/16	2.4	2.4	1/16	2.4	1/16
2.5	2.5	1/16	2.5	1/16	2.5	2.5	1/16	2.5	1/16
2.6	2.6	1/16	2.6	1/16	2.6	2.6	1/16	2.6	1/16
2.7	2.7	1/16	2.7	1/16	2.7	2.7	1/16	2.7	1/16
2.8	2.8	1/16	2.8	1/16	2.8	2.8	1/16	2.8	1/16
2.9	2.9	1/16	2.9	1/16	2.9	2.9	1/16	2.9	1/16
3.0	3.0	1/16	3.0	1/16	3.0	3.0	1/16	3.0	1/16
3.1	3.1	1/16	3.1	1/16	3.1	3.1	1/16	3.1	1/16
3.2	3.2	1/16	3.2	1/16	3.2	3.2	1/16	3.2	1/16
3.3	3.3	1/16	3.3	1/16	3.3	3.3	1/16	3.3	1/16
3.4	3.4	1/16	3.4	1/16	3.4	3.4	1/16	3.4	1/16
3.5	3.5	1/16	3.5	1/16	3.5	3.5	1/16	3.5	1/16
3.6	3.6	1/16	3.6	1/16	3.6	3.6	1/16	3.6	1/16
3.7	3.7	1/16	3.7	1/16	3.7	3.7	1/16	3.7	1/16
3.8	3.8	1/16	3.8	1/16	3.8	3.8	1/16	3.8	1/16
3.9	3.9	1/16	3.9	1/16	3.9	3.9	1/16	3.9	1/16
4.0	4.0	1/16	4.0	1/16	4.0	4.0	1/16	4.0	1/16
4.1	4.1	1/16	4.1	1/16	4.1	4.1	1/16	4.1	1/16
4.2	4.2	1/16	4.2	1/16	4.2	4.2	1/16	4.2	1/16
4.3	4.3	1/16	4.3	1/16	4.3	4.3	1/16	4.3	1/16
4.4	4.4	1/16	4.4	1/16	4.4	4.4	1/16	4.4	1/16
4.5	4.5	1/16	4.5	1/16	4.5	4.5	1/16	4.5	1/16
4.6	4.6	1/16	4.6	1/16	4.6	4.6	1/16	4.6	1/16
4.7	4.7	1/16	4.7	1/16	4.7	4.7	1/16	4.7	1/16
4.8	4.8	1/16	4.8	1/16	4.8	4.8	1/16	4.8	1/16
4.9	4.9	1/16	4.9	1/16	4.9	4.9			

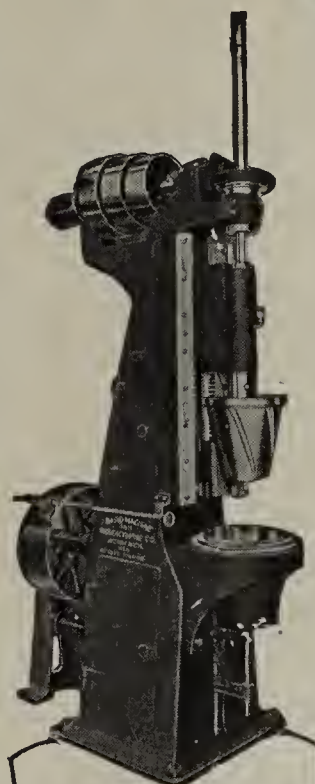
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Flower Pots
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Etc.

Here is a clean cut proposition to you men of imagination. Baird Pottery Machines, famous for flower pots, are now adapted to the manufacture of Crucibles, Stone Ware, Nozzles, Runner Brick, Insulators, etc. Some of these products were not manufactured last year; others in limited quantity.

There is now a big market for these clay-product specialties. The profit is worth while. Are you going after this business?

Machine fits any corner of clay room. Any laborer can operate it to capacity. Only ordinary skill is required in burning to get 100 per cent perfect ware.

Let us have your inquiry and a sample of your clay now.

Baird Machine & Mfg. Co.

265-69 Jefferson Ave., E.,

Detroit, Mich.

"We have been using at our two factories for the past year, Barium Carbonate made by the Rollin Chemical Company. This material is used to prevent scum and has proved entirely satisfactory."

THE UNITED STATES ROOFING TILE CO.

5-15-18

IMPROVE YOUR WARE

It can be done by the use of Rollin's Barium Carbonate because it eliminates scum.

Just add it to your clay at the pug mill or dry pan and it will make the scum-producing salts insoluble and harmless to your ware.

Write us now.

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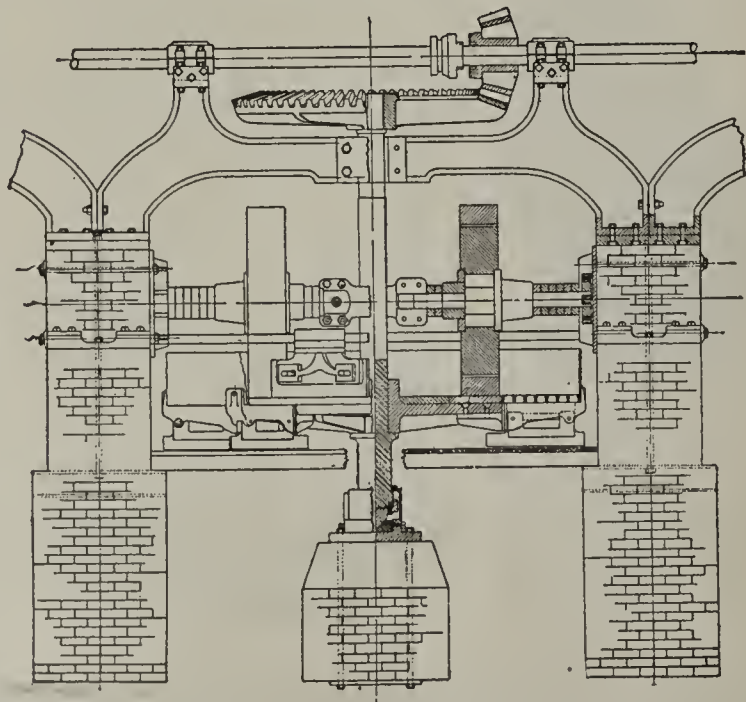
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The "MEANS" 9 Ft. Dry Pan

is being chosen for the reduction of clay and shale by successful claymen because careful comparison with other makes, and records of their performance, show the "Means" to be the best. Special features are the improved step and toe, and adjustable bearings.

In addition to dry pans we manufacture all equipment required in sewer pipe and tile plants, and our special goose-neck attachment for the sewer-pipe press affords a means of making brick directly from the press. Write us.

The Toronto Foundry & Machine Co., Inc.
Toronto, Ohio



ing work is taking an important part in the building movement, and in the borough of Brooklyn, particularly, there are extensive activities in this direction. The popular type of home is evidently dwelling of two-family style, and plans for a large number of such buildings have been filed; this does not mean, however, that one-family residences are in the background, for this is not the case; there are numerous structures of this character under way. New York City, with its big ideas, is looking for big things in construction, and is not having any difficulty in finding them. The past few weeks have unfolded a number of office and loft buildings in various parts of the city, calling for large funds for erection. The Marlin-Rockwell Corporation has arranged for the construction of a new fourteen-story office building of face brick, granite, limestone and terra cotta at Forty-sixth Street and Madison Avenue, to cost about \$1,000,000; the Buckley-Newhall Co. will build a similar twelve-story structure at Sixth Avenue and Forty-first Street, and with other buildings of this type, as well as hotels and apartments, this shows how the "wind is blowing."

North Carolina

The Cleveland Springs Co., which was recently formed at Cleveland Springs, N. C., with a capital stock of \$300,000, plans to manufacture several grades of brick.

The Carolina Shale Brick Co., of Charlotte, N. C., has been incorporated with a capital stock of \$250,000, by W. R. Taliaferro, H. A. Morson and J. W. S. Gilchrist, all of Charlotte.

Plans prepared by the Cerro-Gordo (N. C.) Brick Co. call for a brick plant with a capacity of 30,000 building brick daily. Machinery and equipment will cost upwards of \$7,000, and the buildings about \$8,000. Officers of the new company are: President, R. B. Stephens; vice-president, W. J. Baldwin; treasurer, Mr. Stephens, and secretary, A. L. Griffin. A steam shovel will be included in the equipment used by this concern.

Ohio

The Claycraft Mining & Brick Co., Columbus, Ohio, has increased its capital stock from \$200,000 to \$300,000.

After many months of idleness, the plant of the American Sewer Pipe Co., at East Liverpool, Ohio, has resumed operations. The firm has completed a viaduct under the street railway tracks at that place leading from its clay mines. On account of the large volume of business on hand prospects for steady and continued operations at this factory appear very bright.

Male and female representatives of the medical department of the United States Army who have been engaged in making a survey of the clay plants in the Eastern Ohio pottery and clay plant districts, have been relieved from further duty pending a further need for their service. The survey was made under the direction of the Bureau of Health of the Federal Department of Labor.

The Brunt Tile & Porcelain Co., of Columbus, which operates a large factory at Chaseland, north of Columbus, has increased its authorized capital from \$150,000 to \$500,000. According to General Manager W. F. Steele, needed improvements will be made at the plant. These include a new kiln, a modern dryer and other equipment. Orders are good and shipping is going ahead steadily.

The Mt. Cherry Coal Co., which controls a large acreage near Frederickburg, Holmes County, Ohio, has completed the erection of a fire clay grinding plant and a hollow building tile plant, at an outlay of approximately \$225,000. The

headquarters of the company are in Columbus, Ohio, with Warren B. Ferris as president and general manager. Both of the plants are now in operation as well as two coal mines. Mr. Ferris announces that the output of the two plants as well as the coal mines has been sold. Mr. Ferris is at the head of the Warren B. Ferris Brick Co., a jobbing concern of the Buckeye capital.

Face brick plants in Ohio territory are not having any difficulty in selling all of the brick that can be manufactured. Practically all of the plants in the Buckeye State are over-sold and the officials are now devoting the greater part of their attention to production. The labor problem is now the worst feature. While there are no strikes or especial uneasiness among the workers at the plants, still labor is scarce and the average production is about 60 per cent. of prewar figures. High wages at the iron and steel mills and other lines of industry have attracted brick laborers to such an extent that it is a difficult matter to get sufficient help. The organization of many large factories was demoralized during the term of idleness when war was on and the managers have been unable to get their organizations rebuilt.

Building operations in Columbus, Ohio, continue to expand under the influence of the "Own Your Home" campaign and the general demand for housing facilities. During the past week new dwellings estimated to cost \$130,133 were started and architects and contractors are busy figuring on plans and specifications for both dwellings and apartments. During the past week more than 20 houses were started definitely and each week shows an increase. In comparison with the records of last year the number of new buildings projected show up more than 65 per cent. better. It is believed by Kline L. Roberts, director of the local campaign, that between 40 and 50 per cent. of the inquiries received develop into building projects of considerable size.

On July 1, at 3 a. m., the plant of the Malvern Fire Clay Co., at Malvern, Ohio, was burned to the ground. The fire originated, supposedly, by one of the employes carrying an open torch near where there were some oil barrels filled with oil which was used in the daily operation of the plant, but was not noticed until it was so well under way that there was no hope whatever of saving anything, the plant being located away from the town and no water supply being available. The loss is estimated at approximately \$50,000, partly covered by insurance. The plant, which was erected in 1912, was one of the most complete and modern in this section of the country. It employed about 100 men and was in full operation at the time the fire occurred. The plant will be rebuilt at once and it is the hope of the officials of the company that it will be ready for operation not later than September 1.

Oklahoma

The Tulsa Vitriified Brick Co., which was recently formed at Tulsa, Okla., with a capital stock of \$75,000, has named W. R. Ritchie as its general manager. The capacity of the proposed plant has been given as ten carloads daily.

Work has been started on the construction of the plant of the Mid-Continent Brick & Tile Co., just north of Sand Springs Park, Tulsa, Okla. A. Maile, president and sales manager of the company states that the concern has orders on hand for more than a million common building brick and it is expected the plant will run to full capacity from the day of its completion.

Oregon

Rapid progress is being made on the construction of the new Kenwood school, the brick for which was furnished by

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The Manufacturers of Clay Products at Reciprocal Insurance Bureau, offers you an opportunity to come in and insure against fire with preferred risks that are of your own class and engaged in the same line of business. This Bureau saves you the expense of paying for (1) enormous overhead, (2) agents' commissions, (3) companies' profits. You are assured of greater safety, co-operative assistance of a practical kind, and better service.

A large Brick and Tile plant owner writes:

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We saved the day for the Clay and Coal Operators in War Times by furnishing BUCKEYE MINE RAILS, whenever and wherever needed, and while many other Steel Mills were running exclusively on other material, you could not have operated without us at that time.

Now, in Times of Peace, we ask that you do not forget us, as we can, and will render the same unexcelled service, and furnish the same high quality of material. "Buckeye means best", and BUCKEYE LIGHT STEEL RAILS are better still. All sections from 12 lb. to 40 lb. inclusive always in stock for quick shipment.

Let us have your inquiries, and we will take the chance of developing them into orders on our books.

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Save Labor
Increase Output
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"The Thwing Pyrometer is a paying investment and a valuable asset."—American Terra Cotta & Ceramic Co., Terra Cotta, Ill.

"We find Thwing Pyrometers very valuable and would not care to do without them."—Atlantic Terra Cotta Co., Perth Amboy, N. J.

"With the use of Thwing Pyrometers we have increased our production, saved fuel and labor, and built better pavements."—Cleveland Trinidad Paving Co., Cleveland.

"The use of Thwing Pyrometers has enabled us to save time and fuel with better results in the finished product."—Hocking Valley Brick Co., Logan, Ohio.

"Dr. Thwing's instruments enable us to burn our brick in several hours less time and with considerably less fuel than before installing."—Hayes Run Fire Brick Co., Orviston, Pa.

"We have never installed an appliance that has given more satisfaction and as little trouble as the Thwing Pyrometer."—O. Zimbal Brick Co., Sheboygan, Wis.

"My experience after thirty years is that Thwing Pyrometers are indispensable."—C. H. Eardley, Supt., St. Lawrence Brick Co., Ltd., La Prairie, Canada.

The details of an installation under given conditions involve individual engineering in each instance, so each outfit is sold with our full co-operation in choice of instruments, and with instructions for making the equipment thoroughly satisfactory.

Ask for our engineering advice, or at least write for a copy of our book on pyrometers.

THWING INSTRUMENT CO.
3336 Lancaster Ave., Philadelphia, Pa.

56

the Bend (Ore.) Brick & Lumber Co. It is expected the building will be finished well in advance of September 10, the date set for its completion. This concern has also furnished one hundred thousand brick for the new fire hall.

Pennsylvania

The Harbison-Walker Refractories Co., of Pittsburgh, paid a dividend of one and one-half per cent. on the preferred stock, July 19.

Dilworth, Porter & Co., of Pittsburgh, Pa., have let a contract for a \$110,000 addition to their mill on the South Side district of that city. The addition is to consist of four shop buildings of brick and steel. They are to be one, two and three story structures, and will cover about 31,000 square feet.

Brick prices have advanced in Western Pennsylvania as predicted. A number of firms announced their higher quotations as of July 1, and most of the remainder will put their advances into effect on August 1. Almost all face brick are commanding from \$28 to \$30 a thousand in and around Pittsburgh, and common brick prices developed sufficiently strong to warrant a \$1 increase during the last week of July.

The Glen-Gery Shale Brick Co., of Reading, Pa., with plants near Wyomissing and Shoemakersville, recently announced a reduction of \$3 a thousand on the prices fixed by the government last September on brick. The reduction is made possible because of labor accepting a slight reduction in wages, the slightly reduced cost of coal, and the willingness of the company to manufacture at a lesser profit, in the hope of stimulating business.

With a capacity of 50,000 building brick per day, the Green Hill brick plant at Johnstown, Pa., is to be placed in operation by new owners who have recently formed a company with a capital stock of \$50,000 for this purpose. Officers of the new corporation are: President, H. J. Meehan; vice-president and general manager, W. W. Martin; secretary and treasurer, A. M. Custer. The board of directors, including officers, consists also of Harry L. Tredonnick and A. K. Cosgrove, all of Johnstown.

There are less than a dozen vacant houses in Lancaster, Pa., with no apartments available to renters. Such an affair in housing conditions has never before confronted the city, regardless that building operations during the spring tripled those of the same season last year. Plans are being prepared for the erection of half a dozen large apartment houses. Work has lately been started on an industrial plant to manufacture tin and paper cans, where 200 men will have steady work when completed.

An important bill has been signed by Governor Sproul, Pennsylvania, covering compensation to employes, effecting brick and other clay products plants as well as other industries in the state. The bill provides for an increase in the rate of compensation of injured employes to 60 per cent.; it establishes a new basis of computation for determining the average weekly wage, using the actual number of days worked, instead of 5½ days, as heretofore; it reduces the waiting period to ten days, and makes other minor changes in the former law, including free medical attention for 30 days. The new law becomes effective on January 1.

In speaking of the building situation and the present difficulties encountered, J. Franklin Moss, Philadelphia, probably the most prominent builder of houses for the Emergency Fleet Corporation, points out that due to the war no end of expensive and annoying innovations have been made

in the sale of building materials. For instance, he says that brick has been made smaller, not in length but in width, so that the manufacturer of this commodity really benefits in the long run, as one or two extra brick are secured from every mold. At the same time, the difficulties encountered in regard to labor and other cost factors more than offset any material advantage.

To show the great popularity of brick in the Eastern Pennsylvania section, it is interesting to note that in connection with the proposed new plant of C. H. Masland & Sons, Philadelphia, to be erected at Carlisle, Pa., on property recently secured in this district, a total of about 250,000 building brick will be employed for the first unit. The plant will be used for the manufacture of carpets and kindred products, and is estimated to cost about \$200,000.

The Carnegie Land Co., a subsidiary of the United States Steel Corporation, has started to build 105 brick houses at Bessemer Terrace, 10 miles out of Pittsburgh, Pa., to relieve the housing situation among the employes of the Edgar Thomson steel works. The houses are being rushed up to meet the demand for homes. They range from three to eight rooms each, and will cost a total of \$600,000, exclusive of the cost of land. All the houses are being built to rent, but the company has planned another lot of dwellings to be built for sale to the employes. These are the first of the big company building movements upon which so much of hope is built here.

The American Fire Brick Co., Washington Street, Philadelphia, is now producing about the normal amount of material at its works. A price of \$70 per thousand is asked for the production, which covers a particularly high grade fire brick. The company is of the opinion that prices must decline, but just when this will come about is a matter of guesswork. The prevailing high costs, it is maintained, are a great bar to more activity in building, altho people desiring to build homes or other structures now realize that prices are where they are to stay for some little while.

Prices of building products of all kinds hold firm in the Philadelphia market; there is certainly no trend to lower figures, but a strong inclination to reach higher points. There have been slight advances in a few specialties, but basic materials remain about the same. There is quite an active call for brick, for this is a very popular building product in this section, in fact, Philadelphia is practically a city of brick homes and structures. Good hard common brick is now selling for about \$17.50, delivered on the job, an advance, in reality, of about 50 cents over previous figures; for selected material a price of \$19 is quoted. Face brick of all kinds is operating under a good call; this does not necessarily mean for local service, but rather thruout the Eastern Pennsylvania district, as the city is a logical point of supply for this territory. Prices for high grade material of this character range from \$38.50 upwards, the average price being around \$40 and \$42. The demand for hollow building tile is fair, and for fire brick equally so.

Construction activities at Philadelphia and vicinity are slowly but surely coming around to a more satisfactory point. Since the close of the war, the city has been rather backward in taking hold, at least in the manner so much desired by the brick and building material men. There has been a hesitancy, a determination to wait, and for the most part with hopes of lower prices for needed commodities. With this thought now a thing of the past, things are beginning to move, for prospective builders commence to realize that quotations, instead of coming down, are far more likely

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We don't know of another pump that could be sent 10,000 miles from its point of production, placed in the hands of a coolie and pump every day without a "hitch."

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Too often a belt is merely a belt rather than *the* belt. There's a lot more to the right belt than width, length and price—though, at that, the right belt is always cheapest in the end.

Every drive has its own problem—which must be solved correctly to get real efficient work out of the belt.

The plant engineer, or superintendent, who looks for maximum production—every pound of power from the prime mover put to profitable use—does not buy belting blindly. It is to such a man that Rossendale-Reddaway Fabric Belts are of greatest interest.

For The Rossendale-Reddaway Company makes fabric belts of all types for every service—not merely one belt which can give more or less efficiency depending on the conditions of the drive. It is this ability to supply the *right belt* for the *particular drive* that the Rossendale-Reddaway line of fabric belts has the advantage.

Ask our engineering department for recommendations for your difficult drives. Their advice is competent—and free.

**The Rossendale-Reddaway
Belting & Hose Company**

General Offices and Factory:

Newark, N. J.

2002-R

to advance. That the movement is under way is shown by the records of the local building department for the first six months of the year; during this time permits to the estimated valuation of \$21,982,990 were issued, and of which amount \$17,305,960 is for new structures. When it is stated that the total valuation of all construction in the year 1918 only reached \$15,452,670, one can appreciate the progress which is now being made. The predominating factor is the rush to build new homes; the city is in great need of housing, and wise builders are answering the call. During the first six months of the year no less than 2,395 two-story dwellings have been started, estimated to cost \$10,147,400, or practically one-half the total amount of the aggregate permits filed; in this same time, 340 new three-story dwellings have been built or started, with total valuation placed at \$2,552,915.

Tennessee

The Wm. M. Randolph Estate is erecting several brick store houses on South Main Street, Memphis.

The Lee Estate, at Memphis, Tenn., is erecting several brick buildings one story high on South Main Street, Memphis.

Much of the July work in Memphis, Tenn., includes small store buildings, residences and automobile structures. Considerable brick is being used in some of these.

The Memphis Brick Supply Co., 504 Goodwyn Institute, Memphis, Tenn., reports good inquiries and several nice contracts filled during the second half of July.

O. B. Polk and others at Memphis, Tenn., are erecting four one-story brick buildings on Monroe Avenue at No. 146, the former site of the Baum Cigar Factory, which moved to New Orleans.

Architects McGee and Lester, of Memphis, Tenn., are taking bids until August 5th for the erection and equipment of a brick jail and jailer's residence at Savannah, Hardin County, Tenn. L. L. Harbert, of Savannah, is the County Clerk.

The Herbert-Fischer Brick Co., Shelby County, Nashville, Tenn., has been capitalized at \$200,000, to engage in the manufacture of brick and tile. The incorporators are: B. L. Malloy, W. W. Fisher, G. W. Macrea, J. E. McCadden and William D. Kyser.

Six new one-story brick store rooms are being erected by the Lee estate at Memphis, Tenn., on the east side of Main Street, just south of Talbot Avenue. Each will be 25 x 100 feet. G. M. Shaw & Co., of Memphis, are the architects.

A \$50,000 brick public school will be erected in Dyersburg, Tenn. The Presbyterian Church, a brick structure in this city, will make \$30,000 of improvements. The Methodists have acquired a lot and will erect a new church. The Baird-Dulaney Hospital is being enlarged with a \$37,000 addition.

At Knoxville, Tenn., plans have been completed and contracts let to Southern Ferro Construction Co., of Atlanta, for two large buildings, a main building and agricultural building on same campus as the other structures. These new buildings will cost about \$1,000,000.

Sewanee, Tenn., the seat of the University of the South, is to have several buildings erected to replace structures that burned. Bishop A. W. Knight has been instructed to proceed with these. The Sewanee Inn will cost \$60,000; the Hoffman Dormitory, \$60,000. There will be five residences built for professors at a cost of \$25,000.

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

The Godfrey Conveyor Company

To take care of the vast increase in business Mr. John F. Godfrey, Elkhart, Ind., has found it necessary to incorporate a company known as The Godfrey Conveyor Company.

Ever since Mr. Godfrey devised a simple and practical conveyor system for handling all sizes of coal and similar materials mechanically, there has been a steadily increased interest in Godfrey conveyors, until the incorporation of a company became necessary to manufacture them.

They now have their own complete up-to-date factory and will be able to make deliveries more promptly and give their customers improved service. Sales have been so great within the last few months that they have far exceeded production and this, of course, has delayed filling orders from fifty to sixty days. From now on, however, with the new facilities, they will be able to give more prompt and efficient service.



The Rossendale-Reddaway Belting and Hose Company, Newark, N. J., announces the appointment of Mr. E. O. Floyd as its general manager, to take effect August 1, 1919.

This company manufactures "Arabian" Woven Hair Belting, "Durbar" Solid Woven Cotton Belting, "Senegal" Specialty Canvas Belting and "Seminole," "Cherokee" Red Stitched Canvas Belting. This great variety of belts enables them to take good care of their customers no matter what the class of work.



New Thew Bulletin

The Thew Automatic Shovel Company of Lorain, Ohio, has been before the clay products industry for so many years that no introduction is necessary. From time to time they have been accustomed to issue such practical publications



New Thew Bulletin

that clay products manufacturers are always interested in the literature they send out.

The Industry Bulletin No. 30 deals particularly with Highway Construction. It talks about "The Good Roads Age" and uses quite a number of illustrations that cannot help but be of considerable interest to clay products manufacturers.

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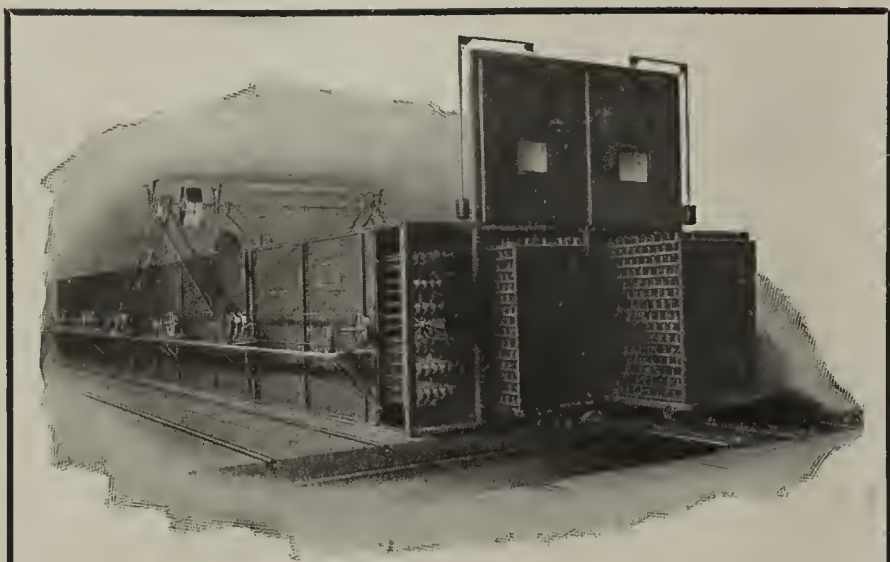
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OUR ENGINEERS are constantly vying with each other in perfecting plans and processes. Improvements, no matter how large or small, are made whenever and wherever possible.

RESEARCH AND experimental work is carried on to test these ideas and to solve the various problems of the different industries. It will pay you to get in touch with the Proctor organization.

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Sun Life Building

This booklet will be mailed to any reader of *Brick and Clay Record* on application to the company at their home office in Lorain, Ohio.

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Industrial Trucks and Tractors

These are the days of efficiency. A much overworked word, but especially applicable to a subject such as the transfer of material.

The industrial truck and the mine locomotive are illustrations of modern methods of haulage, and there are few up-to-date manufacturing establishments or mines that do not employ one or more of these machines. They do the work of many laborers and speed up the haulage so that not only greater quantities of goods are moved, but a large economy in labor is secured.



A Page from "Ironclad-Exide" Booklet

These electrically propelled trucks or tractors are found in manufacturing establishments thruout the country, and are used in railway and wharf haulage and in mines. These applications are shown in an interesting booklet just issued by The Electric Storage Battery Company of Philadelphia, the manufacturer of the "Ironclad-Exide" Battery, whose batteries are extensively used in these machines. Copies of this book can be secured from any of the Sales Offices of the company or by direct request to their general offices at Philadelphia.

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Ricketson Mineral Paints Works, Milwaukee, Wis., call the attention of the trade to an interesting letter received recently from one of their customers, Rochester Lumber & Coal Company, as follows:

"Of late we were compelled to order color from — and our contractors were very much disappointed on account of quality of the material. Had to use twice the amount they had been using of your color. That speaks for itself."

✱ ✱ ✱

"It pays best to buy the best even if it costs a bit more in the start. The best is worth more or it wouldn't cost more." This thought taken from the June issue of "American Clay Magazine," published by The American Clay Machinery Co., Bucyrus, Ohio, referred to the building of roads. It is equally true when you are in the market for clayworking equipment.

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all depart-ments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit sub-scriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

Labor's Voice Demands Your Attention

WE BELIEVE it is paramount that the clay products manufacturer read carefully the accompanying editorial which appeared in the August 9 issue of the "Black Diamond." The subject discussed is one of vital interest to the nation and to industry, particularly.

"Organized labor has raised the issue of taking the industries away from private ownership and turning them over to organized labor to run. Congress is upset over it. President Wilson has abandoned his League of Nations to give it consideration, and the entire Nation is approaching a paralysis that is going to hurt us all.

"The time for dilly-dallying is not now. The citizens of the United States must face the issue squarely. The day for pussy-footing politicians is at an end. The reign of fear which the minority has held should be a thing of the past.

"These United States were builded upon a platform of letting the majority rule. Sometimes, the majority sits back and permits the minority to run things. But, when the people—the great majority takes hold it decides an issue conclusively and finally, and it never makes a mistake.

"This is the time for the majority to step in and take hold once more. This is the time for a fearless seizure of the reins of government by the real ruling class—the preponderance of the population.

"Organized labor, by its own admission, has only 2,500,000 membership—less than two per cent. of the population. Of this number more than one-half are not citizens. It is doubtful, and past elections have proven it, if the remaining citizenship of the remaining one-half can *control* one-half of the votes of that citizenship. Organized labor, therefore, is a small *minority*.

"If the industries of this country are to be turned over to this minority and the *majority* is to submit to this dictatorship, let the majority *say* so.

"We have a ballot in this country. Use it on this issue. Don't let a mere handful of citizens, controlled by an *un-voting, non-citizenship* element decide for us.

"Fight out the issue on the public platform, the soap boxes and in the newspapers. Conduct a campaign of education, each side presenting its case. Then *vote* on it and let the *majority* say whether it shall submit to the wild fancies of a few.

"Organized labor—the minority, has raised the issue. Let us meet it squarely and *settle* it, once and

for all. To evade the issue now is simply postponing the day of disaster."

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Labor and Wages

THE QUESTION of labor and wages is a paramount subject these days. With no apparent decrease in the cost of the necessities of life, or of other basic commodities upon which the prosperity of the country is dependent, and with every indication that prices may go still higher, has it come to a point where labor wage scales must again be advanced proportionately—or disproportionately?

This is a matter that confronts all lines of American industry as a unit; there is not an important field of activity or subsidiary branch of business that is not affected. It gives rise to all sorts of consequences to make for all sorts of circumstances and conditions, for eventually, there must come an end. Certain levels must be established and maintained.

The building industry remains at a standstill in Chicago because of the failure to agree to a new level that is fair to both labor and contractor. Over a hundred thousand men are out of work because of this combination strike and lock-out.

Viewing the railroad situation as a barometer of the trend of affairs, we find that wage increases or a decrease in cost of living is the demand made by the railway brotherhood. This demand represents a new departure from the usual methods followed by labor but emphasizes the sincerity in which they tender their requirements for better living wages.

Similar conditions to a large extent are evidenced in the textile industry, another important line of American endeavor. In New England districts and in other parts of the East, wages at many mills have been increased and shorter working day placed into effect—a flat eight-hour day.

A meeting of the potters' union at East Liverpool during the past month, brings forth the information that 8,000 pottery workers in this country have tendered a demand for a 25 per cent. wage increase to the manufacturers in September, with provision for an eight-hour working day, and four hours on Saturday. As is generally known, the present wage scale expires October 1.

The ultimate outcome, considering the matter of labor and wages as a whole, is a matter of guesswork. The atmosphere may be cleared before we know it, or again, the cloud may hang for a little time to come. One thing sure, it is the optimistic and undaunted spirit that will carry the balance to the right side, for the law of supply and demand will be the deciding factor—it couldn't be otherwise.

More About Coal

COAL SHORTAGE, or rather a prospective one, is still furnishing material for the feature writers. In fact, if we are to believe our friend, the coal man, this subject is increasing in importance rather than diminishing.

Most of us, even tho we are consuming coal now in much larger quantities than in the winter months, are not particularly interested in the coal supply. This is exactly the reason, coal operators say, why they are apprehensive of the future. Jobbers and dealers, it seems, are not laying in stocks, like they ought. The reason they are not buying heavily is due to the lethargy of the consumer who seems to have forgotten the fuel-less Mondays.

The burden of any coal shortage usually falls on the manufacturer who is a large consumer. He receives attention first when there is any cutting to be done. Therefore, he is vitally interested in seeing the coal supply well maintained. Make inquiry of dependable operators as to the prospects for the future with regard to the supply of fuel. Forewarned is fore-armed.

And then it would seem to be a good time to enter into contract for perhaps a year's supply of coal. It is hardly likely that prices will be lower, especially if a shortage is experienced. The man who is compelled to buy coal on the open market in a crisis is usually in a bad way.

* * *

Goodbye, Fond Hopes

THOSE who have been looking for the high cost of living to descend are slated to have their fond hopes dashed to the earth, for we are just told that according to leading experts there will be no material lowering in the high price of food-stuffs for at least another year.

A drought has damaged the corn crop to such an extent that the yield this year is likely to prove less than the average domestic requirements. Heavy reductions in the yield of wheat in this country and in Canada, as well as in oats, rye, and barley, in connection with the prospective demands of Europe, is taken as indicating that all foodstuffs will remain as high as at present or *go still higher*.

Drought has done undetermined damage to corn and potatoes, the latter crop being nearly cut in half in some sections. The loss in corn is expected to be reflected in the price of hogs this fall and winter, while the burning up of the pastures in the Central States and the loss in Wyoming, Montana, and North Dakota is forcing cattle to market at an unusual rate.

But what has all this to do with the operation of a clay plant? The answer is simple. High living costs mean continued high wages, and continued high wages mean continued high manufacturing costs.

These conditions force upon the management a more aggressive sales policy. Cheap prices and cut quotations are suicide in the face of high manufacturers' costs. The clay products manufacturer who is alive to the situation will find that in order to progress or even to hold his own, it will be necessary to be identified with an active advertising and promotion program.

In this connection what merits the support of the brick, hollow tile, sewer pipe or other clay products manufacturer more than the associational efforts that are fast getting under way?

* * *

One Cause of Chicago's Race Riots

AMONG THE SEVERAL REASONS advanced for the recent race riots in Chicago, lack of housing enters as one of the most important. Owing to the great shortage of homes in the districts where the colored man makes his abode, he has been forced to look for lodging elsewhere and naturally has moved into districts where the population consisted chiefly of whites. The white man usually, in a case like this, moves away to a different location. However, under present conditions, this is impossible. The great scarcity of houses in Chicago makes a search for new houses almost futile.

Bad housing causes discontent. Many other cities beside Chicago are in urgent need for home building. Yet increasing land values, rising cost of construction, growing expense for maintenance and increasing cost of transportation, are rendering more and more difficult the problem of the workingman's providing adequate shelter for his family within a reasonable distance from his work. Home ownership, in other words, is steadily on the decline.

Something must be done to solve the housing problem in this country. The bill recently introduced by Representative G. H. Tinkhour, of Massachusetts, to create a Bureau of Housing and Living Conditions in the Department of Labor seems to be a step in the right direction.

Ready September 1.

That new book we've been talking about—"Clay Plant Construction and Operation"—one of the most important volumes published in recent years on the ceramic industry—Get in on the ground floor—Get one of the first copies sold.

NINETEEN-EIGHTEEN REFLECTS EFFECT

*Statistics for the Year 1918 Compiled by the United States
in Value of Brick and Tile and an Increase of Sixteen*

THE VALUE OF CLAY PRODUCTS of the United States in 1918 was \$288,547,000, an amount which, compared with the value in 1917, \$248,023,368, indicates a decrease of \$19,476,000, or 8 per cent., as shown by a preliminary estimate made by Jefferson Middleton from returns submitted by producers to the United States Geological Survey, Department of the Interior. The clay products are divided by the survey broadly into brick and tile, which includes structural, engineering and refractory products; and pottery, which includes wares of higher grades. In 1918 the brick and tile industry marketed products valued at \$163,324,000, a decrease of \$28,537,000, or 15 per cent. from 1917. On the other hand, the pottery industry, marketed products valued at \$65,222,951, an increase in value of \$9,060,429, or 16 per cent.

Tho the decrease in the value of most brick and tile products was large in spite of increases in price, the decrease in quantity was much larger.

BURNED CLAY USED IN CONCRETE SHIPS

Burned clay was used in 1918 for the first time as an aggregate for concrete in building ships. The war made it imperative that steel be conserved as much as possible, and the experiment of building sea-going ships of concrete was undertaken. It became necessary to make the concrete as light in weight as possible, so various light materials, including pumice, were tried. An aggregate made of burned shale or clay, proved to be a very acceptable substitute for stone and gravel in concrete, and its use reduced the weight per cubic foot from about 150 pounds to 118 pounds or, in some mixtures, even to 100 pounds. This aggregate was made near Birmingham, Ala., at Hannibal, Mo., and at Los Angeles, Cal. Its manufacture was not begun until late in the year, but enough was made to construct a 3,000-ton concrete ship, the "Atantis," which was launched in December, 1918, at Brunswick, Ga.

GENERAL DECREASE IN OUTPUT AND VALUE

The clayworking industries experienced unusual conditions in 1918. The decreased demand for structural material was felt early in the year on account of the general decline in building operations. Vitrified brick, sewer pipe, and drain tile are used principally in engineering works, and the demand for them apparently should have been strong for roads, farm drainage, and public utilities in the army camps and cantonments and in settlements for war workers, but the shortage of labor and difficulties of transportation restrained the output of these wares, which decreased considerably in value compared with 1917. The refractory products—fire brick and stove lining—showed considerable gains in value.

The industries were also subject to curtailment of fuel and to building and other restrictions imposed by the war boards with a view to making the country more efficient

in the supreme business of the times, that of winning the war. The fuel curtailment order issued by the Fuel Administration to the clayworking industries under date of April 13, 1918, provided that the percentage of fuel allowed for these industries, as compared with that shown by the average consumption in 1915, 1916 and 1917, would be 50 per cent. for common brick, paving brick, face brick, terra cotta, roofing tile, floor and wall tile, and sanitary ware; 75 per cent. for hollow tile, sewer pipe, drain tile and flue lining; and 85 per cent. for stoneware, except chemical stoneware.

GREATEST VALUE EXCEPT THAT FOR 1917

Notwithstanding these hindrances, the value of the output of the kilns of the country in 1918 was the greatest recorded in any year except 1917. As might be expected, the decreases in quantity of output have been considerably larger proportionately than the decreases in value, owing to the higher average prices prevailing in 1918. The quantity of common brick, for instance, decreased 41 per cent. and the value decreased 22 per cent. The average price per thousand increased 32 per cent. The quantity of fire brick decreased 16 per cent. and the value increased nearly 10 per cent., whereas the average value per thousand increased 30 per cent. Hence where value only is given the decreases do not tell the whole story, but they constitute the best data now available for comparison. The only brick and tile products that increased in value were refractories, fire brick and stove lining, for they were used in many war industries. The fire brick, including silica brick, was valued at \$63,637,000, an increase of \$5,625,000, or nearly 10 per cent. The output of stove lining increased in value from \$619,882 in 1917, to \$730,000 in 1918, an increase of \$110,000, or 18 per cent.

DECREASE IN COMMON BRICK

The production of common brick, until 1917, the most valuable product of the clayworking industry, showed decrease in both quantity and value. The quantity produced in 1918 was 3,450,612,000, which, when compared with the quantity produced in 1917, 5,864,909,000, shows a decrease of 2,414,297,000 or 41 per cent. The value of common brick marketed in 1918 was \$37,208,000, which, when compared with the value in 1917, \$47,936,344, shows a decrease of \$10,728,000 or 22 per cent. The production in 1918 was the smallest ever recorded by the United States Geological Survey and the value is the smallest since 1898. Common brick is used principally in the structural industries, which, so far as general operations were concerned, were almost paralyzed in 1918. It is true that the number of Government buildings erected in that year was abnormally large, but the number of brick used in these buildings was comparatively small, and their use by the Government contributed little to offset the losses in the general demand for common brick. The average price per thousand in

CLAY PRODUCTS VALUE of WAR RESTRICTIONS

*Geological Survey Show a Decrease of Fifteen Per Cent.
Per Cent. in the Pottery Industry as Compared with 1917*

1918 compared with 1917 increased \$2.61, or to \$10.78, the highest average price reached in recent years in the United States for common brick, and nearly twice as great as it was ten years ago. Another cause that contributed to the decrease in the production of common brick is the increasing use of hollow building tile.

HOLLOW BUILDING TILE GROWING IN FAVOR

Hollow building tile, in common with other structural products, decreased in quantity and value in 1918, but its decrease in value was smaller than the decrease in the value of any other structural materials except fancy brick and enameled brick, which are minor products. The output in 1918 was 1,964,000 tons, valued at \$12,980,000 which, when compared with that in 1917, 2,590,028 tons, valued at \$13,255,433, shows a decrease of 626,000 tons, or 24 per cent. in quantity and of \$275,000, or 2 per cent. in value. Hollow building tile was used by the Government in large quantities in 1918 and its greatly increased use in the future seems assured, as it is not only desirable material for use in partitions and floors in large buildings in a city, but for use in dwellings, barns, silos and other buildings in the country.

PAVING BRICK SHOWS DECREASE

Vitrified brick or block, which is used chiefly as paving material, was in less demand in 1918 than for many years, the decline in its use being caused by high freight rates,

embargoes on rail shipments of commodities least essential for war purposes, and shortage of fuel. The quantity marketed in 1918 was 403,512,000 brick or block, a decrease of 303,422,000, or 43 per cent. The value was \$7,232,000, a decrease of \$3,433,000, or 32 per cent. The production in 1918 was the lowest since 1896, and was only about 40 per cent. of that of the maximum in 1909. The value of this product in 1918 was the smallest since 1905, tho the average price per thousand (\$17.92) was the highest recorded.

HIGH VALUE FOR SEWER PIPE

The third brick and tile product in value was sewer pipe. The output in 1918 was valued at \$15,399,000. The growing popularity of this material in engineering works is shown by the fact that its decrease in value, \$1,908,000, or 11 per cent., was proportionately small. The value in 1918 was the largest recorded except that in 1917, and making a liberal allowance for increase in price the product in 1918 must have been larger than in any year prior to 1912. Considerable quantities of vitrified sewer pipe were used in Government projects at army camps and cantonments.

SMALL OUTPUT OF DRAIN TILE

Drain tile is used principally in the improvement of farm lands in the Central States, where large quantities of it are laid annually. Notwithstanding the efforts to

Clay Products of the United States in 1917 and 1918*

				Approximate Increase Or Decrease in 1918	
		Quantity	Or Value	Per Cent	
Common brick:					
Quantity	M.	5,864,909	3,450,612	—	2,414,297
Value	\$	47,936,344	\$ 37,208,000	—	\$ 10,728,000
Average value	per M.	\$8.17	\$10.78	+	\$2.61
Face Brick:					
Quantity	M.	757,618	364,421	—	393,197
Value	\$	10,391,368	\$6,339,000	—	\$4,052,000
Average value	per M.	\$13.72	\$17.39	+	\$3.67
Enameled brick		\$889,899	\$685,000	—	\$205,000
Fancy or ornamental brick		\$192,072	\$35,000	—	\$157,000
Hollow building tile or block:					
Quantity	tons	2,590,028	1,964,000	—	626,000
Value	\$	13,255,433	\$12,980,000	—	\$275,000
Average value	per M.	\$5.12	\$6.61	+	\$1.49
Tile (not drain)		\$6,821,221	\$4,894,000	—	\$1,927,000
Terra cotta		\$6,173,550	\$2,505,000	—	\$3,669,000
Vitrified brick or block:					
Quantity	M.	706,934	403,512	—	303,422
Value	\$	10,664,560	\$7,232,000	—	\$3,433,000
Average value	per M.	\$15.09	\$17.92	+	\$2.83
Sewer pipe		\$17,307,211	\$15,399,000	—	\$1,908,000
Drain tile		\$11,008,163	\$7,388,000	—	\$3,620,000
Fire brick:					
Quantity	M.	1,631,316	1,373,674	—	257,642
Value	\$	58,012,264	\$63,637,000	+	\$5,625,000
Average value	per M.	\$35.56	\$46.33	+	\$10.77
Stove lining		\$619,882	\$730,000	+	\$110,000
Miscellaneous		\$8,588,879	\$4,292,000	—	\$4,297,000
Total brick and tile		\$191,860,846	\$163,324,000	—	\$28,537,000
Total pottery		56,162,522	65,222,951	+	9,060,429
Grand total		248,023,368	228,547,000	—	19,476,000

*Figures for 1918, except pottery, estimated.

increase agricultural endeavors, its decrease in value in 1918 was \$3,620,000, or 33 per cent. The output in 1918 was valued at \$7,388,000, which, with proper allowance for increased cost, was probably the smallest output since 1903.

LOW LEVELS FOR FACE BRICK AND TERRA COTTA

Face brick is used principally in the outer walls of buildings of the better class. As the erection of such buildings naturally fell off during the war, the use of face brick decreased in 1918. The quantity of face brick marketed in that year was 364,421,000, a decrease of 393,197,000 or 52 per cent. compared with 1917, and the value was \$6,339,000, a decrease of \$4,052,000 or 39 per cent. The quantity marketed in 1918 was the smallest since 1901 and was about one-third of that of 1916, the year of maximum production. The value was the lowest since 1904. The average price per thousand (\$17.39) was \$3.67 higher than that of 1917, the previous high year.

Terra cotta and tile other than drain tile, both structural materials used principally in high-class buildings, also showed a large decrease in value and reached the lowest point recorded for many years. The value of terra cotta marketed in 1918 is estimated at \$2,505,000, a decrease of \$3,669,000 or 59 per cent. compared with 1917. The value of tile other than drain tile was \$4,894,000 a decrease of \$1,927,000 or 28 per cent. compared with 1917. The value of fancy or ornamental brick is estimated at only \$35,000 in 1918, a decrease of \$157,000 or 82 per cent. compared with 1917. It showed a larger proportionate decrease in 1918 than any other clay product, as the use of fancy or ornamental work in the structural industries was reduced to a minimum in 1918. The demand for fancy or ornamental brick has been decreasing for many years, these products having been replaced to some extent by terra cotta, and it will probably become so small within a few years as to be negligible.

FIRE BRICK VALUE INCREASED, PRODUCTION DECREASED

The production of fire brick, the most valuable product of the clayworking industries, showed decrease in quantity and increase in value. The quantity produced in 1918 was equal to 1,373,674,000 nine-inch equivalent brick, which when compared with the quantity produced in 1917, 1,631,316,000, shows a decrease of 257,642,000 or 16 per cent. The value of fire brick marketed in 1918 was \$63,637,000, which when compared with the value in 1917, \$58,012,264, shows an increase of \$5,625,000 or nearly 10 per cent. This is the largest value ever recorded by the Geological Survey for fire brick and is more than twice as great as that in any other year, except 1917, and more than three times as great as that in any year prior to 1916. The quantity reported for 1918 is the greatest recorded except that for 1916 and 1917. The great increase in output of refractories in recent years is due to their use in the manufacture of iron, steel, coke and the munitions of war. The average price per thousand (\$46.33) is the highest recorded and is more than twice as much as for that of any other year except 1917. Stove lining, the other refractory, also showed a large increase in value when compared with 1917.

IMPORTS AND EXPORTS

The total value of the imports of clay products at the port of shipment in 1918 was \$6,684,200, an increase of \$41,627, or less than one per cent. over those in 1917. The value of imports in 1918 compared with that in 1907, the year showing the greatest value of imports, decreased \$7,126,732, or nearly 52 per cent. The increase in 1918 over 1917 was in pottery, the brick and tile products

showing a small decrease. Ninety-six per cent. of the imports (\$6,393,580) were pottery, the remainder (\$290,620) consisting of brick and tile.

The value of the exports of domestic clay products in 1918 was \$7,932,574, an increase of \$979,311, or 14 per cent. over 1917. Of these exports \$5,700,371, or 72 per cent. was brick and tile, \$1,479,552, or 19 per cent. was pottery, and \$752,651, or 9 per cent. was unclassified.



Exports of Burned Clay Products

That export demand is under way for American burned clay products is shown by the records of shipments from the port of New York for May, 1919, figures for that month having recently become available. The commodities in active call for foreign account include fire brick, chinaware, earthenware and tile, with smaller shipments of fire clay.

Exports of fire brick for the month noted totaled \$44,802, with the largest shipments going to China, \$26,397 (105,000 brick); Peru, \$6,497 (11,000); Chili, \$2,876 (75,000); Cuba, \$2,009 (43,000); and San Domingo, \$2,260 (32,000).

Figures for chinaware show a total of \$26,805, the principal points of delivery being: Cuba, \$4,227; Haiti, \$1,499; Brazil, \$981; Belgium, \$1,400; Mexico, \$1,801; and the Philippine Islands, \$11,018.

Earthenware was exported to the amount of \$446,467 from the port of New York, with primary destinations as follows: Netherlands, \$429,632; Iceland, \$1,186; Panama, \$2,095; Mexico, \$2,928; Cuba, \$2,175; Peru, \$700; San Domingo, \$989.

The shipments of tile for foreign account reached \$11,635, with largest purchasers including Cuba, \$1,941; Argentina, \$2,320; Chili, \$2,614; Venezuela, \$417.

The exports of fire clay from New York totaled \$1,446 for May, the shipments going to Costa Rica, Mexico, Cuba and South American ports. The shipments of other clays amounted only to \$412.



Good Roads Congress Plans Big Exhibition

The seventeenth annual convention of the American Road Builders' Association will be held at Louisville, Ky., on February 9, 10, 11, 12 and 13, 1920.

In connection with this meeting of the Association, which will be the Tenth American Good Roads Congress under the auspices of the A. R. B. A., there will also be held the Eleventh National Good Roads Show. At the 1918 and 1919 meetings, the show feature of the congress was confined to small exhibits that could be accommodated in the hotels in which the meetings were held. The conditions which led to the adoption of this plan no longer existing, it is proposed to make the 1920 show similar to the complete exhibits that were held previous to 1918. Moreover, because of the re-awakened interest in road building and the enormous expenditures which are going to be made in the next few years, the officials of the association expect to get together an exhibition that will surpass even those of former years.

Both the sessions of the convention and the exhibition will be accommodated in the First Regiment Armory. About 53,000 sq. ft. of floor space will be available and plans of the exhibition hall will be prepared and issued in the near future. As the armory is situated within two or three blocks of the leading hotels of the city, the officials of the Association feel that the facilities for the meeting are very nearly ideal.

The program, as in years past, will cover every phase of highway construction and maintenance and various related subjects. The prepared papers and the discussions will deal with highway problems from the points of view of road and street officials, highway engineers, contractors, and all of the various classes actively engaged in highway work.

LARGE DELEGATION ENJOYS A.C. S. MEETING

Ceramists Combine Pleasure With Inspection of Various Kinds of Industries on Well Attended Trip to Buffalo, Niagara Falls and Cleveland

PLEASANT WEATHER, inspection of various types of plants of national interest, tours to places of scenic interest, a boat trip on Lake Erie, and a jaunt to a place of pleasure and amusement, combined to make this year's summer meeting of the American Ceramic Society one of great enjoyment to all who were fortunate enough to be in the party. The attendance was very good, varying at times from fifty to seventy guests. The trip started at Buffalo, N. Y., with headquarters at the Iroquois Hotel, included a visit to Niagara Falls and ended up at Cleveland, Ohio.

By noon, Monday, August 4, about forty-five members had gathered at the Iroquois Hotel in Buffalo ready to start out on the first trip arranged for this year's outing. A street car conveyed the members to the mammoth and modern factory of the Pierce-Arrow Motor Car Co. The

A dinner at the Iroquois in the evening was accompanied by singing and later by speeches from several of the prominent members. R. T. Stull, president of the American Ceramic Society, in a short talk before his audience mentioned that there were two especially important phases of the ceramic industry to be developed; one was the purification of clays, and the other, the development of artistic pottery that is distinctively American in design and character.

A timely and exceedingly important point was made by Mr. Bleininger, who contributed a few remarks at this time. He stated that the labor problem should be studied with more attention and that this question should command greater consideration at the various schools and colleges than has heretofore been given it.

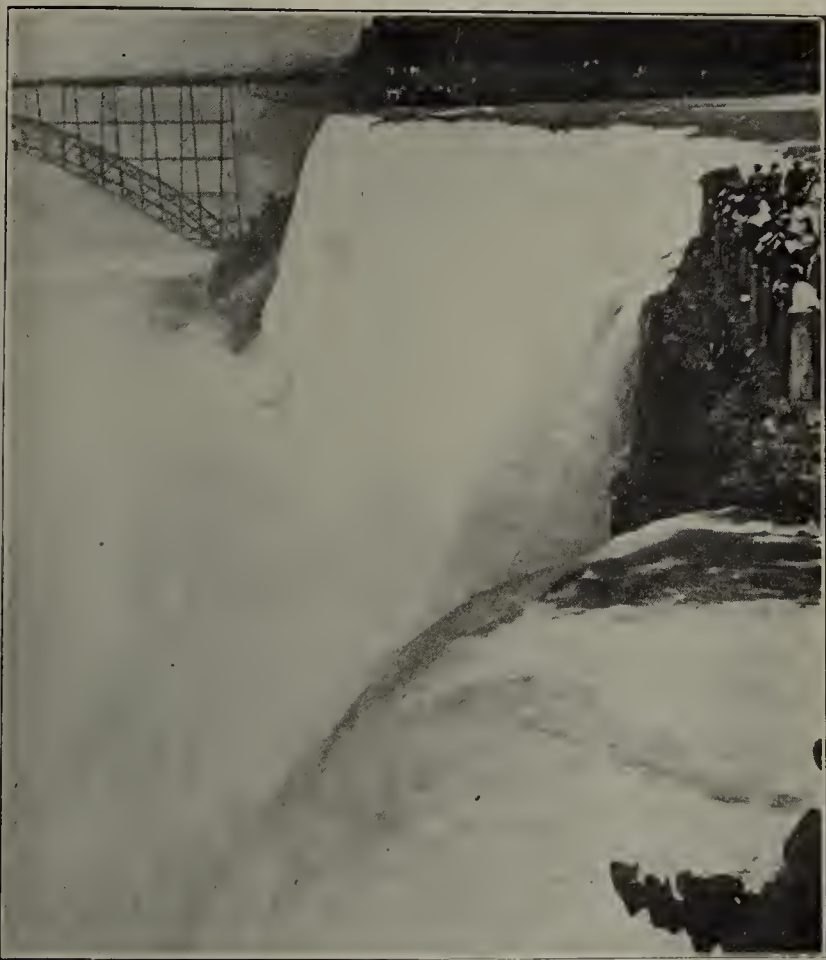
AMERICAN FIRM MAKES HIGH QUALITY WARE

The interesting information was given out by Mr. Brown, of the Lennox Inc., of Trenton, N. J., who stated that chinaware of a quality as good as the best made in Europe is now being fabricated by his concern.

Before the society adjourned so that the professional divisions could hold their meetings, the terra cotta section was commended because of its splendid organization and the program it had mapped out for the coming year which included a list of some fifteen papers which various members of this division are working on at the present time. Mention was also made of the fact that the English Ceramic Society would be the guest of the American Ceramic Society in 1920 and everyone was urged to arrange his vacation accordingly. The report of the meeting of the Refractories Division is given elsewhere in this issue.

Three sight seeing buses gathered the guests at 9:30 Tuesday morning, and conveyed them to Niagara Falls where the first stop made was at the Shredded Wheat Biscuit Co. A very instructive trip was made thru this model plant and the entire process of manufacture was followed from beginning to end. It was a revelation to most of the members to see the great amount of machinery used which reduced the number of operations formerly done by human hands to a minimum. Following the inspection thru the various departments of the factory, the American Ceramic Society members were treated to a light luncheon consisting mainly of the products made at the factory.

The next points visited were two of the mammoth power plants on the Niagara River. The necessary amount of water is diverted into pipes and drops thru a distance of about 150 feet during which fall it accumulates an immense quantity of potential energy. This energy is then converted into power by means of water wheels placed at the lower end of the pipe. It was interesting to note the huge hollow vertical shafts about



One of the Beautiful Scenes Observed by the Delegation at
Niagara Falls.

enormous machine shops, the body making section, the paint shops and assembling department held considerable interest for every one. The average capacity of this plant is reported to be fifteen passenger cars and fifteen trucks daily. Many of the passenger cars command a price of \$7,700 which news when communicated to the ceramists caused them to decide that that factory was no place for them to linger at.

150 feet in height, as well as the many other worthy features of this plant.

TRIP THRU NIAGARA GLEN

The Chamber of Commerce tendered the society a splendid luncheon which was followed by a descriptive talk on the power development of Niagara Falls, by J. L. Harper,



A. V. Bleininger, Mr. and Mrs. Conrad Dressler in the Center, in a Confabulation. R. H. Minton is at the Right of the Picture Starting to Roll Up His Sleeves.

who is connected with the power company there and is also a member of the American Ceramic Society. He brought out the point that the Falls had an average annual recession of about six feet. He also predicted that the fuel requirements of the ceramic industry would some day necessitate the use of electricity for burning ceramic ware. Mr. Harper states he has already investigated this matter and has invented a kiln fired with electricity for this very purpose.

The next thing in line was a climb into the buses again and a sightseeing trip to various places of interest about the Falls. One of the best and most remembered points of interest was the jaunt thru the woods at Niagara Glen and the inspection of the pot holes and other unusual effects of nature. This trip was conducted by Mr. Murphy, a naturalist, who knows this country well and whose explanation of the different phenomena was followed with interest by the party. This walk down and up the steep embankments, over fallen trees and between huge rocks, put everyone in a proper mood to enjoy what was undoubtedly one of the best dinners on the trip. This replenishment was enjoyed at the Hotel Clifton, which overlooked the Falls from the Canadian side. Except for the trip back to Buffalo on motor buses, this ended the day's program for Tuesday.

POTTERY PLANT HOLDS ATTENTION

Wednesday started with an inspection of the large establishment of the Buffalo Pottery Co. in the morning. Here were seen automatic dryers, and a drying arrange-

ment whereby the racks are pulled out almost to the worker's bench and then pushed back again when filled, thus saving unnecessary steps in placing the ware in the dryer rooms. The racks hang from pulleys which run on beams extending forth from the wall towards the jiggering machines. Various types of china and porcelain are manufactured by this concern and the inspection undoubtedly proved of interest to all.

From here the ceramists went to the enormously large establishment of the Larkin Co., where first a complimentary luncheon was served accompanied by movies and then followed by a jaunt thru the buildings. This firm is a "factory to family" house supplying all sorts of household goods, varying from cosmetics to large pieces of furniture. Methods of filling packages, bottles, and so forth were viewed with interest by members of the society who wished that clay ware might lend itself to such mechanical handling as the food products and other goods in this factory were subjected to. At the end of the tour thru the plant, each visitor was presented with a stick of shaving soap. A. V. Bleininger smiled at the girls presenting the cakes of soap and thus got three sticks. R. T. Stull says he heard Mr. Bleininger say that he was "so-ap-leased" for the gifts.

A trip thru the extensive plant of the Lackawanna Steel Co. concluded the program for the day. Each one boarded the "City of Buffalo" at 9:00 p. m. and made the trip to Cleveland over night, via Lake Erie. The evening was splendid for a lake trip—a clear sky with bright moonlight and the smooth lake enticed everyone to stay on the decks till a late hour.

On Thursday morning the members split up into two parties. One group visited three enameling plants, which included the Enamel Products Co., the Vitreous Enameling Co., and the Cleveland Metal Products Co. The other group proceeded to the Nela Park Research University of the National Lamp Co. Both of these trips proved to be very instructive.

CERAMISTS END TRIP WITH A PLEASURE JAUNT

The wind-up of the trip took place in an afternoon and evening visit to the beautifully located club house



The "Copper Solution" to the Wait for "Murphy" Who is Showing the Rest of the Party the Mysteries of Nature in Niagara Glen.

and grounds of the Cleveland Yacht Club. Part of the membership formed two baseball teams calling themselves the "Kilns" and the "Clays." The "Kilns" set too hot a pace for the "Clays" who only stood eleven while

the "Kiln" went up to nineteen. Thus the game, which proved very exciting, ended with a score of 19 to 11.

A meeting of the Glass Division of the Society was also held at this time. A few of the members enjoyed a swim while others amused themselves watching the activities of Ross Purdy in his bathing suit.

A splendid dinner was tendered the members of the society by the Northern Ohio Section of the American Ceramic Society. This was followed by dancing in the evening which ended all too soon to satisfy the majority of the members of the society, all of whom were finding this a very enjoyable feature of the program.

Before we complete the account of the meeting it is fitting to commend the committees and especially S. C. Lindbarger, of the Carborundum Co., Niagara Falls, Herman Worsham, Carrier Engineering Corporation, Buffalo, and R. D. Landrum, Harshaw, Fuller and Goodwin Co., Cleveland, for the splendid manner in which they arranged for the various trips and entertainment features and their good care of the guests who attended the meeting.

About six ladies accompanied the society thruout its tour and each one reported a very enjoyable trip. Altho very few ceramic plants were inspected the value of visiting establishments in other industries is undoubtedly a good idea for it offers suggestions and furnishes food for research which is entirely welcome.

ROSTER OF ATTENDANCE

The following list of names is not complete but among the many printed below you will undoubtedly find a number of your ceramic friends:

S. C. Lindbarger, Carborundum Co., Niagara Falls, N. Y.
O. O. Bowman, J. L. Mott Co., Trenton, N. J.
Ed. Ditherage, J. L. Mott Co., Trenton, N. J.
C. Nick Mussig, B. F. Drakenfeld and Co., East Liverpool, O.
Wm. H. Sheaman, New Jersey Zinc Co., New Lork, N. Y.
Homer F. Staley, Bureau of Standards, Washington, D. C.
R. H. Minton, General Ceramics Co., Metuchen, N. J.
H. Dan Smith, Smith-Phillips Co., East Liverpool, Ohio.
R. E. Anderson, Norton Co., Worcester, Mass.
H. Schmidt, Roessler & Hasslacher Co., New York City, N. Y.
Y. Isaka, Asahi Glass Co., Tokio, Japan.
H. E. Maddock, J. Maddock & Sons, Trenton, N. J.
J. W. Hasburg, J. W. Hasburg Co., Chicago.
Leslie Brown, Lennox Inc., Trenton, N. J.
W. H. Clayton, Lennox Inc., Trenton, N. J.
A. B. Payne, Hazel Atlas Glass Co., Washington, Pa.
H. G. Willetts, The Willetts Co., Pittsburgh, Pa.
A. Zakaroff, Martens Co., New York City, N. Y.
Donald Hagar, Jeffery-Dewitt Co., Detroit, Mich.



This Snap Was Taken at the Doorway of the Shredded Wheat Biscuit Co. The Group Had Just Been Fed Which Accounts for the Happy Countenances.

F. L. Steinhoff, *Brick and Clay Record*, Chicago.
C. F. Geiger, Carborundum Co., Niagara Falls, N. Y.
R. G. Landrum, Harshaw-Fuller-Goodwin, Cleveland, Ohio.
F. G. Lord, Pennsylvania Pulverizing Co., Lewistown, Pa.
A. S. Walden, National Carbon Co., Cleveland, Ohio.
F. S. Harvey, Semet-Solvay Co., Syracuse, N. Y.

A. F. Korman, Kohler Co., Kohler, Wis.
D. H. Applegate, Philadelphia Textile Machinery Co., Philadelphia, Pa.
George Haaf, Pass & Saymore, Inc., Solvay, N. Y.
Frank S. Hunt, Beaver Falls Art Tile Co., Beaver Falls, Pa.
J. W. Wright, Macbeth Evans Co., Pittsburgh, Pa.
M. G. Babcock, Mellon Institute, Pittsburgh, Pa.



A Few of the Ceramists Who Were in the Party That Enjoyed the View of the Falls From Terrapin Point.

Raymond M. Howe, Mellon Institute, Pittsburgh, Pa.
Donald E. Sharp, Spencer Lens Co., Buffalo, N. Y.
P. H. Walker, Carborundum Co., Niagara Falls, N. Y.
Elza F. Heistand, Gill Clay Pot Co., Muncie, Ind.
Donald W. Ross, Findlay Clay Pot Co., Washington, Pa.
Fred Hampen, Findlay Clay Pot Co., Washington, Pa.
R. T. Stull, Bureau of Mines, Columbus, Ohio.
J. S. McDowell, Harbison-Walker Refractories Co., Pittsburgh, Pa.
J. B. Shaw, New York State School of Clayworking and Ceramics, Alfred, N. Y.
Chas. F. Binns, New York State School of Clayworking and Ceramics, Alfred, N. Y.
Norah W. Binns, Alfred, N. Y.
A. V. Bleininger, Bureau of Standards, Pittsburgh, Pa.
H. Forester, Veritas Firing Discs, Cleveland, Ohio.
W. H. Grant, Elk Fire Brick Co., St. Marys, Pa.
Millard F. Gibson, National Fire Proofing Co., Toronto, Ont., Canada.
J. L. Harper, Niagara Falls, N. Y.
M. E. Blackburn, Buffalo, N. Y.
A. A. Klein, Norton Co., Worcester, Mass.
M. F. Beecher, Norton Co., Worcester, Mass.
Herman Worsham, Carrier Engineering Co., Buffalo, N. Y.
M. C. Gregory, Brick, Terra Cotta & Tile Co., Corning, N. Y.
Conrad Dressler, Dressler Tunnel Kilns, New York, N. Y.
F. A. Kirkpatrick, Bureau of Standards, Pittsburgh, Pa.
F. W. Walker, Beaver Falls Art Tile Co., Beaver Falls, N. Y.
J. A. Bole, New York State School of Clay Working and Ceramics, Alfred, N. Y.
Ross C. Purdy, Norton Co., Worcester, Mass.
T. A. Randall, Clay Worker, Indianapolis, Ind.
Fred Sauereisen, National Lock Co., Rockford, Ill.
F. W. Lapp, LeRoy, N. Y.
C. Treischel, General Electric Co., Schenectady, N. Y.
T. G. McDougal, Champion Ignition Co., Flint, Mich.
A. F. Hottinger, Northwestern Terra Cotta Co., Chicago.

Cleveland Builders Supply and Brick Company Takes in Another Supply Interest

Another building supply interest has been added to the list of those acquired with the consolidation of the Cleveland Builders' Supply Co., with the Barkwill-Farr Co. and others, and during the past fortnight the Cleveland Builders' Supply & Brick Co. absorbed the building material business of the Sheets Elevator Co. The deal is effective August 1. The hay, grain, flour and feed business of the Sheets Elevator Co. will be retained by that company, according to J. M. Sheets, president. The principal reason advanced for the turning over of the building supply branch of the business to the Cleveland Builders Mr. Sheets explains, is that there was too much detail to be looked after with the different branches of the business so diversified. It was a question of dropping one phase or another of it. Preference for dropping the building supplies end of the business was given. The materials in stock and all customers of the building supply branch of the Sheets interests are acquired by the Cleveland Builders.

Officers of the Sheets Elevator Co. are: President, J. M. Sheets; vice-president, Arthur Kender; secretary-treasurer, F. S. Sheets. According to President Sheets the deal is a purchase outright, and the Cleveland Builders' Supply & Brick Co. has no connecting interest with the Sheets concern.



14% Gain in Canada's May Building Permits

The total value of building permits issued in thirty-five cities during the month of May showed an increase as compared with April, the value being \$7,005,425 in May as against \$6,457,906 in April, an increase of \$547,519, or 8.5 per cent. All the provinces except New Brunswick and Manitoba reported increases in this comparison. As compared with the corresponding month in 1918, there was an increase of 44.3 per cent., the value for May, 1918, being \$4,854,839. In this comparison also New Brunswick and Manitoba recorded declines, while substantial increases reported in Alberta and in Quebec, Nova Scotia and Ontario. Of the larger cities, Montreal alone recorded increases as compared with April, 1919 and May, 1918, while Toronto and Edmonton showed gains over May of last year. Winnipeg and Vancouver reported declines in both cases. Of the smaller centers, Sydney, Sherbrooke, Fort William, Guelph, Ottawa, Stratford, Windsor, Calgary and Victoria all showed considerable increases in both comparisons.



Common Brick Prospectus Now Ready

Copies of the prospectus prepared by the Common Brick Manufacturers' Association of America are now off the press and will be in the hands of all manufacturers who have written for a copy, within a few days. The prospectus is a large book measuring about 15 by 24 inches and printed in several colors. It is very cleverly written and every common brick man will want to read it.

The book is entitled "A National Campaign of Education and Business Building for Common Brick," and points out the need for publicity, explains and illustrates the association trade mark which is a combination or monogram of the initials of the association and which will be stamped on each brick made by a member of this organization; it also tells the scope of the campaign. Illustrations of brick homes with bill of materials are included and mention is made of various books which will be prepared on

the following subjects: "Books for Builders," "Use of Common Brick for Garages," and "Brick for Industrial Buildings." If you have not already written for a copy of this prospectus, do so now, for if you go no further you will at least enjoy the book.

Volume 1 of "Building Economy," an eight-page magazine, published by the Common Brick Manufacturers' Association of America, has just made its appearance. Ralph P. Stoddard is editor and William Carver architectural editor of this organ. The publication is printed in the interest of using common brick for building economy and is to be distributed to all building brick manufacturers, building contractors, architects, real estate operators, editors of building publications or of building and real estate departments of newspapers and "men about to build."



In connection with the publicity plan of the association, Mr. Stoddard, secretary-manager of the organization, is now touring the East to obtain signatures for this big campaign. He has just completed the rounds in Detroit and written that the entire membership in that city has signed up the agreement.



Finds B. & P. Co.'s Sewer Pipe in Germany

A. E. Blackmer, second vice-president and sales manager of the Blackmer & Post Pipe Co., St. Louis, Mo., received the following letter from Robert Tiemann, relative to an incident that happened while he was "Over There," and which *Brick and Clay Record* believes will be of interest to its readers:

"After the armistice was signed, the 240th Machine Gun Battalion of which I was a member moved up into Germany as part of the Army of Occupation. It was while on a practice march one day along a stretch of road that was being reconstructed between the towns of Bitburg and Erdorf, that I discovered a piece of Blackmer & Post Pipe Co.'s six-inch sewer pipe. My attention was drawn to this piece as it was so very much different from the rest of the pipe being used. The one most noticeable feature was the glaze which of course the other make did not have.

"This no doubt will interest you as you see the B. & P. Co.'s products are not only used in the United States but as it now appears, over the entire world.

"Hoping to have the pleasure of telling you more about this in the very near future, I am."



Business has picked up materially in and about San Francisco during the past month, according to reports from the majority of brick and other clay products dealers. New building contracts are steadily growing in volume, calling for various clay products. Ornamental tile, terra cotta and roofing is being used extensively on the better grade of apartment houses and office buildings which are going up in this city and across the bay, and local firms are stimulating factory output in order to meet the demand of builders. The valley sections of the state are in a particularly prosperous condition and as reconstruction work is well under way in the agricultural centers, a considerable amount of clay building materials is being sold in those districts.



Creation of a bureau of housing and living conditions to serve as a clearing house for information regarding housing and living conditions thruout the United States is provided in a measure offered by Representative Tinkham, of Massachusetts.

SUGGESTIONS *on* PLANT LOCATION *and* DESIGN

*Reprinted from Chapter XVI of the Book
"Clay Plant Construction and Operation"*

By A. F. Greaves-Walker, Cr. E.

Sales Engineer, American Refractories Co., New York City

IT WOULD BE IMPOSSIBLE in a single chapter or even several chapters to attempt to cover the subject thoroly of locating and designing a clay products plant. Each proposed plant should be handled as a separate engineering problem as conditions will vary greatly according to the ware to be made, the raw material used and the plant location.

This chapter will therefore treat only with the general principles governing the designing of all plants no matter what the type of ware produced.

It is presumed that in selecting a plant site the proper amount of consideration has been given to such important items as drainage, water supply, railroads, markets and freight rates.

Speaking of the industry at large, there are too many instances of lack of consideration on the future of the plant. This is often shown in purchasing the plant site proper. Only sufficient land or suitable land is acquired to build the original unit and consequently when the time for expansion arrives the company is in a quandary.

Every successful plant will grow and in acquiring a site, provision should be made for this growth. Land in the vicinity of a plant seldom depreciates and generally enhances in value so that even if too much is bought originally it can later be disposed of at a profit, if necessary.

WARE TO BE PRODUCED

This subject is generally given very early consideration, in fact, the product to be made is often decided upon before the deposit is located. There are two ways of approaching this subject—one to determine first the ware to be made and then to seek a suitable deposit of raw material and the other to determine by thoro tests what types of ware can be produced from the deposit after it is located.

Too often this most important item is approached in the wrong way. Either the product is determined upon without consideration being given to the raw material available or the raw material is determined upon without due consideration being given to the product it is intended to manufacture. Many plants have commenced operations before it has been discovered that the deposit is not suitable and in very many cases it has been the death knell of the plant, so far as its original owners were concerned at least.

CAPACITY OR OUTPUT

The original capacity of a plant is usually governed by the dryers or kilns. In considering the question of capacity of a new plant it is by far the wisest plan to figure under rather than over. If more ware can be produced than can be disposed of, part of the investment must stand idle,

whereas, if the reverse is true it is always easy to make additions. Most plants, as originally designed, are poorly balanced, one or the other of the departments being unable to produce what the others can take care of.

Great care should be exercised in working out and balancing the various departments, this being especially true of the dryer and kiln departments.

Machine equipment whose capacity is considerably in excess of that required is not generally economical to operate. It is not good practice to put in a brick machine having 100,000 capacity per day if only 50,000 are to be made, with the idea of future development. It is far more sensible to put in a 60,000 capacity machine and when the increased demand comes install an additional unit. The large unit will produce the best product when operating at its normal capacity and would therefore produce the 50,000 required in half a day, leaving a problem of disposing of its crew for the balance of the day. In addition to this a power plant sufficient to operate the large unit would be required and every machine from pan to pugmill would have to have the maximum rating or a great loss of efficiency would occur.

Dryers are very likely to be under the desired capacity and it is always wise to allow considerable leeway in this department, especially as the depreciation is very low. It is poor practice to provide more kilns than can be efficiently used, but this is seldom done. Very often it is the reverse. Kilns depreciate heavily when not in use, especially during winter weather.

CHOICE OF EQUIPMENT

Choosing the equipment for a plant is a very difficult job for the inexperienced and almost as difficult for a clayworker entering a new line.

The clay machinery manufacturers have greatly improved their equipment in the past few years and it is not now a question of getting good equipment so much as the proper selection.

Very often the prospective purchaser is forced to deal with men who have no engineering knowledge and who know as little about his requirements as he knows himself, sometimes less. The purchase of equipment on a purely price basis has also gotten many plants into difficulties at the very beginning.

When not thoroly familiar with the requirements, a clayworker or prospective clayworker should consult either an engineer or another clayworker who is familiar with the product, before reaching a decision. This is extremely important as it can safely be said that the great majority of new plants have in the past been greatly handicapped by

purchasing unsuitable equipment. It is generally the one great desire of experienced clayworkers that they have the opportunity of rebuilding their plants in order that the original errors might be eliminated.

STORAGE OF RAW MATERIAL

Very seldom is a plant originally equipped with proper storage facilities. If a plant is to operate the entire year this is practically always essential. In cold climates frozen clay or shale is encountered during the winter and in warmer climates the winter season is generally wet. Rainy days will drive a clay or shale pit crew from their work and this compels a shutdown with attendant losses. Of course, where clay is mined underground a storage is not so essential.

It is not necessary to have an expensive storage shed or building as even an open building, simply roofed over, will serve the purpose.

As a rule, with good management, a clay or shale pit can be operated a great deal during the winter months and if only a storage building for minimum requirements can be afforded it is necessary only to figure on capacity sufficient to carry the plant over protracted cold or wet spells. As the men who usually handle the pit can be used in the shed when it is necessary to draw on the storage, equipment for mechanical handling is not necessary, altho when the situation warrants it it is usually a good investment.

DRYING EQUIPMENT AND BURNING SYSTEM

There are four systems of drying available—mechanical, waste heat, direct fired and waste steam.

The mechanical dryer is an expensive installation and should be used in connection with the manufacture of high priced products such as refractories, in preference to all others.

The waste heat dryer, using heat from cooling kilns, is the most popular system and where heat can be drawn from a sufficient number of kilns, is economical and generally successful. Where few kilns are available and it is necessary to resort to an auxiliary furnace for sufficient heat, the system becomes uneconomical and dirty. Practically any type of product can be dried by this system when it is intelligently handled and under proper control.

Direct heat dryers or those provided with a furnace under each tunnel are also popular and very successful with any type of product. The control of this type is almost perfect, but when a quantity of waste heat is available and is not used it is undoubtedly the more expensive to operate.

Waste steam dryers are not now used as much as formerly, due to the heavy upkeep and the fact that live steam has to be furnished during the hours when the plant is not producing ware and the engine running. This makes the drying cost high.

The selection of one of the systems must be made after taking into consideration the raw material, the product, waste heat available and its source and the price of fuel. Consultation on this matter with those having experience will also pay in the long run.

The selection of a burning system is so bound up with the product, location of plant, fuel available and size of plant that in this case also it is a question that should be very thoroly investigated before a decision is reached. The systems available are the scove or open top, the down draft, the continuous and the railroad tunnel kiln.

It would require a chapter to go into the merits of these various types. It is sufficient to say, therefore, that the type in most successful and general use in the vicinity of the proposed plant, and in use on the same type of product, will usually be the safe type to select. This again is a question that should be referred to an authority before

reaching a decision as each plant presents a problem in itself.

LAYING OUT THE PLANT

It is almost impossible to use standard plans in laying out a plant, but the method herewith presented will make it fairly easy for a man with very little mechanical ability to handle the planning successfully.

After the equipment, dryers and type and number of kilns has been fully decided upon a small drawing, absolutely to scale, should be made of the plan (floor area occupied) of each machine. The dimensions should be taken from blueprints furnished by the machinery companies. Similar drawings, always to the same scale, should be made of the motors, engines and boilers, in fact this must be done for each and every piece of equipment that goes into the factory. The dryers and kilns should be handled in the same manner, a separate drawing being made for each tunnel and kiln.

When these are completed, each drawing should be *cut out along the exterior lines*. With the aid of an architect's scale they can then be arranged on a large sheet of paper in any manner that suits the fancy and when finally a layout that appears to be the most compact and efficient has been arrived at, the outline of the buildings, tracks, switches, etc., can be sketched in around them. The beauty of this arrangement is that any number of different arrangements may be tried by merely shuffling the small drawing around and the defects in each arrangement studied. By this method also it is very easy to allow for the proper clearance around each piece of equipment, the proper pulley centers and to avoid crowding, as well as to tell at a glance whether or not the material is kept constantly flowing in one direction without any "back tracking."

By making an extra set of these small outline plans and using a surveyed plan of the property the proper provisions for future growth can be made.

This method will be found vastly superior to that of laying out a plant along the lines of another seen elsewhere or according to a single preconceived idea, as seldom, in such cases, does it happen that the mistakes are found until the plant is ready for operation.

BUILDINGS SHOULD ADMIT PLENTY LIGHT

During recent years the type of building erected by the clayworker has been a vast improvement over those of a few years ago.

There is really no reason why a clay products plant should not have buildings of a modern factory type. As the manufacturer of the best of structural products, the buildings should really be an advertisement. The elimination of fire risk is also an important item. Being almost always of the single story type there need be little lumber used and that only in the roof trusses.

Light buildings are almost essential if a good product is to be made, and as it is as cheap to put in sash and glass as to fill the same space with brick, plenty of light and air should be provided.

POWER CONSIDERATIONS

A few words on the subject of power may be of value. The time has arrived or is rapidly approaching when power can be purchased in almost any part of the country cheaper than it can be produced in a small factory steam plant.

In deciding the question as to the power that will be used a balance must be made between the individual plant and purchased power. On the individual plant the installation of boilers, engine, shafting, pulleys and feed water pumps are part of the original investment, with fixed charges for the services of engineers, fuel, fuel handling and boiler com-

pounds additional. Against this there is the cost of purchased power and the motors. Installation expense and repairs are not taken into consideration, but they will be in favor of purchased power.

Aside from the above a great deal of consideration must be given to the flexibility of motor drives. A far more flexible and compact plant can be built and generally with a saving on building cost. In addition troublesome belts can be replaced by chain drives and line and counter shafting, which is always a nuisance, can be done away with. Before a decision is reached all these items should be carefully considered.

CONSTRUCTION OF PLANT

One of the peculiarities of the clay industry is that it is probably the only large industry known in which the plant operators attempt to do their own construction. This is stranger, too, when it is considered that so many clay plant managers and superintendents know absolutely nothing about building construction. Plenty of proof of this is seen in the many clumsy, dark, unhandy plants that are seen on every side.

Building construction is a business in itself, and in most cases should be left to those who know it. Why the clayworker is unwilling to turn the construction of his plant over to a reliable contractor is hard to determine. The contractor will certainly make a profit on the job, but even allowing for this, it is safe to say that the job will cost less and be done better than if he attempts it himself. The larger and better managed companies are putting their construction work in the hands of reliable firms, but the smaller companies still seem to hesitate about doing so.

There can be no question about the advisability of letting plant construction out on contract, especially as the contracting business has reached a high plane. Very often the contractor, thru his experience, can point out various improvements that can be made in the plans, and if the contract is on a time and material basis plus a percentage, he can very often secure the materials cheaper than can an outsider.

While it is advisable to contract the construction of the buildings proper, it is always advisable for the clayworker to take charge of the setting of his equipment (providing he is capable of doing so), and the construction of the kilns. Kilns built on contract are usually unsatisfactory, and as they represent a large part of the investment and much depends on them, great care should always be exercised in their erection.



Refractories Division Inaugurate Program

In connection with the summer meeting of the American Ceramic Society, the refractories division of this organization, convened on Monday evening, August 4, in one of the rooms of the Iroquois Hotel, Buffalo. A. V. Bleininger presided, while R. M. Howe assumed his place as secretary.

The main business of the meeting was the molding of a definite policy for this division. A census was taken of laboratories and subjects for research by questioning each of the twenty-five members who were present. It was proposed by the members that such subjects as "Effect of Freezing on Fire Brick;" "How to Lay Up Fire Brick With Insulation Brick;" "Steam Pressed Brick;" "Refractories for Glass Houses;" "Study on the Life of Saggers;" "Developments of Dolomite Brick," and so forth, be studied.

Many of the members present were connected with laboratories where research could be carried on and all

of them offered to do some sort of investigation along the lines suggested.

One of the developments arising from this meeting was the appointment of three sub-committees. The first to take care of specifications for pot clays. It was suggested that the English specifications on glass pots be studied and a set of American specifications be drawn up, using the above for a basis.

A second sub-committee was proposed to study the matter in regard to the subject of saggers. In a discussion referring to refractory products during the evening, it was learned that much time and work could be saved if microscopic tests could have been made on materials that were being investigated, hence, it was suggested that a sub-committee be appointed on microstructure, and the duties of this committee will be to offer aid to other members who desire to have tests of this nature run on their material. The committee will be made up of those members in the society who are petrographers.

It was also proposed at this meeting that a circular letter be drawn up telling of the developments of the division and containing questions and answers that arise in the interim and mailed monthly to each member of the division.



Changes Name to Kimbell-Wheeler Brick Co.

The name of the Kimbell-Hill Brick Co. has been changed to Kimbell-Wheeler Brick Co., this action having been taken by the stockholders in recognition of the splendid work of President Burt T. Wheeler, who succeeded Martin N. Kimbell to that office upon the death of Mr. Kimbell in the spring of 1918.

Mr. Wheeler is strictly a Chicago product, having been born in this city in 1886. He is a graduate of the Chicago office of the Hydraulic-Press Brick Co., where he spent eight valuable years. He assisted in the organization of the Kimbell-Hill Brick Co., in December, of 1913, and served as second vice-president up to the death of Mr. Kimbell.

The officers and directors of the Kimbell-Wheeler Co. remain the same as under the old name. Offices of this concern are at 319-320 Chamber of Commerce Building, 133 West Washington Street, Chicago.



British Labor Unrest Analyzed

The American Chamber of Commerce in London reports the six main causes of industrial unrest in Great Britain as decided upon by the Joint Committee of Employers and Employed appointed at a recent conference of London manufacturers. They are: Suspicion, fear of unemployment, unfair division of profits and products, status in industry, extremist propaganda, and economic fallacies.

Greater cooperation between capital and labor is recommended by the establishment of Departmental Committees and General Works Councils and the admission of labor to a greater measure of participation in the inner councils of businesses.

The American Chamber of Commerce in London understands that the main reason for dissatisfaction among the employers is the tendency on the part of labor to restrict output. It was generally agreed that a betterment of the standards of living would automatically bring about increased output.

"BUILD NOW" SLOGAN JUSTIFIED *by* CONDITIONS

Analysis of the Various Factors That Enter into Building Construction Shows That the Public Would Be Wise to Build Now—In Sections Where Construction Work Lags, Widespread Publicity Should Be Given to Facts Mentioned in This Article

INDIVIDUALS AND INDUSTRIES in some parts of this country are still waiting for an intangible something to happen before they proceed with building operations. While in a great many sections of the United States, building has picked up remarkably, "the best in years," as some say, there yet remains a number of districts where the "Build Now" campaign has failed to take its proper hold on the public. Where this has been the case, educational work should be promoted by manufacturers and dealers in building materials.

Reasons for building now are many and obvious. Contrary to the opinion of some few who still look for a reduction in price of materials, there can be no such occurrence because of existing conditions. Wages will not be reduced for years and prices depend a great deal upon cost of labor, as everyone knows. The demand for labor will exceed the supply. Even now, plants are unable to operate at full capacity because they cannot secure the necessary labor. Most of these plants are doing their utmost to increase their output, but the labor shortage is a deciding factor as to the volume of the output. We can expect no appreciable immigration of labor to this country while on the other hand, hundreds of thousands of our former laborers are returning to their native lands.

According to the Dow Service reports, this country is now forty-six per cent. under built. Our population has been growing steadily, but our industrial development, our house building, our hotel building has all been held in abeyance even as far back as the panic of 1907. When the European War broke out, the industrial life of this country was at low ebb. Our iron and steel industries were greatly depressed. The war saved the situation and turned the tide from the steady ebb of depression to the flood of prosperity. But during the whole war period we put aside the doing of the ordinary things of life in building work and concentrated our work on war activities. We now face the problem of how to build rapidly enough the millions of dwellings which it is estimated America needs, as well as the great number of hotels, industrial buildings, highways, etc. Every industry will be crowded to the limit of its capacity; probably not to the limit of its possible capacity, but to the limit of its labor supply.

Moreover, the decreasing supply of standing timber in this country makes certain a steadily rising cost in lumber. We have been drawing heavily upon our stock of timber for many years until we have reduced it to a point where there is an enormous advance in the value of lumber.

All of these things combine to make high costs inevitable. In addition, however, to this situation we have a world-wide money inflation. The enormous debts can

only be paid by maintaining high wages, which means high prices for everything produced by labor. To undertake to deflate the world's currency within the next few years would be a fatal mistake.

STAMPEDE OF PRICES AND BUILDING WORK PREDICTED

These conditions forecast an unparalleled situation in the building markets next year. The natural conclusion is that construction work can be done cheaper today than in 1920, or for years to come. The builder can now at least get deliveries, and that will be far from possible when the coming transportation shortage, due to lack of rolling stock and motive power becomes a serious reality.

An item which appeared in a recent issue of the "Saturday Evening Post" stated: "By next spring construction work will have a representation of between fifty and seventy per cent. of normal, etc. By 1922 the condition of construction in this country will have been so aggravated by the backwardness of builders that speculation will force a stampede of prices and building work that will be wholly unprecedented."

In connection with the building situation, it is interesting to note what some of the men in the clay industry say. E. M. Thomas, treasurer of the Hay-Walker Brick Co., New York City states: "Regarding the building situation and outlook in Greater New York, we are pleased to state that things look more promising every day. Since April of this year we have shipped over four million brick to Brooklyn, New York and the demand now is even greater. Most of this work is speculative, the buildings in general are apartments and two-family houses, which are erected from six to ten at a time. Reports from the builders advise us that the buildings in most cases are sold before they are completed."

"Up to the present time, in conjunction with our various factories, we have been able to handle this business to the satisfaction of all concerned, the only trouble being railroad conditions. In some instances, we have had cars consigned to a certain destination and the railroad has placed the car three or four miles away from the shipping point called for on the bill of lading."

ANTICIPATE ENORMOUS CALL FOR FACE BRICK

"Borough of Manhattan, New York City, has had very few building operations this year. At the present time we have quite a few inquiries, and prospects of an early start being made seem very promising. Operations in the Bronx Borough are coming along fairly well and no doubt within the next month or so building will be resumed as in the years previous to the war. If New York City and the outlying suburbs start operating on as large a scale as

Brooklyn, we will have the largest call for face brick that the brick industry has ever witnessed. There is no doubt that building in New York City, especially of apartments, will begin within the next month as there are absolutely no accommodations for home seekers.

"It stands to reason that the city of New York, which has practically done no building in 1918 and very little up to date, must resume building at a very early date. In the past the New York City market has used more face brick than any one territory in the United States. At any rate we are now preparing and expect to have the largest call for face brick in the history of our business."

The above statement should serve to establish greater confidence in the minds of those who do not feel that building activity is coming back to its own. The following matter received from August Staudt, president of the Perth Amboy (N. J.) Tile Works, brings out conditions in the labor situation.

"I can from general as well as personal experience state that the outlook and prospects in the line of floor and wall tile and faience has never been brighter and more encouraging than at this time.

SHORTAGE OF TILE IN THE U. S.

"There is, at present, an actual shortage of tile all over the country, owing to the sudden rush in the building line. Our industry is yet in its infancy, but it seems as if the value of tile with regard to sanitation, cleanliness, durability, as well as its decorative features, are just about becoming fully realized and appreciated, and we are looking forward from now on to a rush on our product, which I believe will be unprecedented in the annals of our industries.

"As yet, most of the tile is used in alterations, but if once the many big buildings that have been started, or on which architects are still busy drawing specifications will go under actual construction, the tile industries will be taxed to their full capacity to meet the demand.

"Good and conscientious help is getting scarcer from day to day, which circumstance makes it very difficult to many factories to work their plants to full capacity. Only revolutionary methods of labor-saving devices in clay-working machinery and appliances will be the means of keeping abreast with the enhanced demand for tile in the future."

Wm. D. Gates, president of the American Terra Cotta & Ceramic Co., Chicago, after reading the item which appeared in the "Saturday Evening Post" under the head of "The Question of Building" writes a very interesting letter containing a number of points of material interest.

"The article in the 'Saturday Evening Post,'" says Mr. Gates, "stating that our laborers are leaving for foreign parts at the rate of one thousand a week, that the entire country is under built and that building is arrested by the idea that material is high and that costs will fall, demands careful consideration.

"People seem to take the high cost of living as an accepted fact. All restrictions on price of the absolute essentials of life are removed. Very largely the world quit producing these things and centered every effort on destruction instead of production. Now they must all eat and there is less to eat. The dollar now has to measure itself as against the loaf of bread. Once his dollar measured up against seventy-cent wheat—now against two twenty-six. The laborer cannot be underfed, his dollar is only a medium of exchange, how is he going to be fed?

"Strikes are resulting. The situation is unprecedented. Just now the contractors of this city, having a three-

year-agreed price with their men have had to advance their pay one dollar a day. As they had figured their work on the basis of their agreement this advance will put many of them out of business, and the end is not yet in sight. Other trades are making their demands, some reasonable, some not, and the building business of this city is stopped while people are clamoring for homes, for offices, for factories and for necessary public improvements.

"Meantime nothing is done to regulate or control the price of the things we eat, which things properly measure the worth of the dollar which we must exchange for them. Our fields are yellow with the biggest harvest of wheat we ever had, our cold storage buildings are bursting with meats, but the dollar will get but little.

PREDICTS BUILDINGS WILL BE MORE COSTLY

"I can see no prospect of building material being cheapened under existing conditions. We must pay our employes living wages or they will go elsewhere and get them. If we cannot pay the wages we must shut our factories. There is now a shortage of men and our output is limited to the number of men we can get. All the producers of building material are gambling on the future right now and know right well that they will probably have to increase their wage with absolutely no likelihood whatever of a reduction.

"Buildings will go up. The urgent demand for them will necessitate their construction. Personally I am confident that they will soon be delayed thru lack of material and will be more costly rather than less and very probably unobtainable."

Publicity work in newspapers, special literature sent out, and other forms of promotional work has done much to boom building construction in a large number of instances. If those centers where building conditions are weak would do more in the line of publicity work setting forth the advantages of building now, there is no doubt but that the situation would improve. Clay products manufacturers should lend their hand in informing the public of conditions as they exist as set forth in this article.

It is interesting to note from a newspaper item how one particular city is handling the housing problem. According to the Osceola (Neb.) "Democrat," the citizens of Falls City have organized a Home Building Co., and about \$50,000 has been subscribed to the undertaking which is to promote the building of homes and rental properties.

In other cities the Chamber of Commerce has pushed the "Build Now" program with great success. Again, in many places manufacturers and dealers have undertaken cooperative advertising which in nearly every case has been found to be of great help to promote construction work.



The Glass Container Association of America has been incorporated under Delaware laws, without capital stock, to carry on investigations and research work for improvement in glass products, including clays and raw materials, glass pots, etc. The incorporators are: John F. Perry, Bridgeton, N. J.; Frank F. Ferguson, Alton, Ill.; and H. H. Gritzan, Jr., Baltimore, Md.



The latest proposal on the part of certain St. Louisans interested in building is to wage a hard fight against the building code which prohibits the use of hollow tile as chief construction material.

FACE BRICK MEN ACT NEW EXECUTIVE SECRETARY WILL PLAN BIG PROGRAM

Retail Dealers in Face Brick, Show an Aggressive Purpose to Strengthen Organization, Launch Greatest Publicity Campaign in Industry's History—Association Headquarters Will Be Established September 1, at Chicago

MORRIS W. MONTGOMERY, the new executive secretary-elect of the Face Brick Dealers' Association of America, will face a big job, but an inspiring one, when he enters upon his duties at Chicago, September 1.

"We have taken a step which must either make or break our association," declared several members of the board of directors to a representative of *Brick and Clay Record* in speaking of the new program.

"The plans to be inaugurated with Secretary Montgomery's installation will comprise a most vigorous and extensive publicity campaign, which it is expected will prove the most important move ever undertaken by the retailers of face brick in the United States.

A MAN OF LARGE EXPERIENCE

Secretary-elect Montgomery is a man of the highest ability and comes to the association fresh from large tasks of vital



MORRIS W. MONTGOMERY

moment on behalf of the United States Government at Washington, where he was the executive head of the Restricted Industries Section of the Fuel Administration.

This latter work involved a complex and exhaustive sur-

vey of the industries using the largest quantities of fuel—the arrangement and supervising of conferences with a host of industrial officials, as a result of which, essential information was secured which premised all government orders in that particular field.

Under his immediate direction the Face Brick Dealers' Association, with the hearty backing of the present officers, will, it is expected, quickly forge to the front among national dealer organizations and no matter of protection or conservation of the dealers' rights and privileges, in their relation to the manufacturers and the building public, will be overlooked in the work which will be carried on.

Aside from his extensive government experience during the war years, Mr. Montgomery is a man of most genial and magnetic qualities. A Wolverine by birth and education, educated at Michigan Agricultural College and the University of Michigan, for five years thereafter secretary to his father, Justice Montgomery of the Supreme Court of Michigan, and for seven years connected with the business of the Olds Gas Power Co., and the Seager Engine Works, as general sales and advertising manager, Mr. Montgomery was called into the government service from a prosperous northern Michigan farmstead, where for the last five years he had been studying the intricacies of commercial agriculture.

Perhaps the most significant fact about the new plans of the association is that they are to be inaugurated at a time when retailers everywhere are awakening to the need for more extensive co-ordination of effort in their relationship to producers. When it is realized that the manufacturers of face and common brick and hollow tile are on the eve of launching a well planned campaign of publicity for general trade expansion, the timeliness of the proposed propaganda of the Face Brick Dealers' Association is certain to prove vastly beneficial to the whole industry.

Every bonafide retail dealer in face brick has a right to full membership and privileges in the Face Brick Dealers' Association and all inquiries and applications for membership, which dealers desire to send in before September 1, should be forwarded to President Jno. M. Stoner, Cincinnati Clay Products & Supply Co., Cincinnati, Ohio.

The officers and Board of Trustees of the Association are as follows: Jno. M. Stoner, president, Cincinnati Clay Products & Supply Co., Cincinnati, Ohio; D. W. Clark, treasurer, Buffalo Builders Supply Co., Buffalo, N. Y.; R. L. Findlay, Hay-Walker Brick Co., New York, N. Y.; W. H. Gifford, Wisconsin Lime & Cement Co., Chicago, Ill.; and F. N. Blanchard, Nebraska Material Co., Lincoln, Nebr.

National headquarters of the association will be located in Chicago, further particulars of which will be published later.

ASSISTING LABOR *with* INDUSTRIAL TRUCKS

Equipment Formerly Thought Unnecessary on a Ceramic Plant Is Now, in This New Age, Becoming Indispensable—to Wit—the Industrial Truck and Tractor

THE BRICK and hollow tile manufacturing plant, terracotta factory, the pottery and the various other ceramic industries offer many opportunities for the use of mechanical and labor-saving equipment. From the mining and transportation of clays at the clay beds to the finished product, and almost regardless of the exact nature of this finished



For Distributing the Ware Drawn from the Kilns to the Stock Piles, the Industrial Truck Has Given Very Good Service on This Plant.

commodity, there is constant and necessary demand for the handling and moving of materials of all kinds; electric-operated and hand-propelled trucks, wheelbarrows, industrial railways, mechanical conveyors, cars, loading and unloading devices, and so on, can be used for primary and subsidiary service to decided advantage, making for higher efficiency in plant operation and production.

The day of excessive hand labor—calling upon man to do this or that phase of common drudgery and ordinary “mule” work, and which mechanical means can readily accomplish, is past. At least, it is so in that plant which seeks to cut down the costs of labor and overhead, and to enter the market with assurance that it can meet fair competition thru the fact that its product is not costing any more than a like commodity at any similar well organized works. Besides the present day laborer refuses to do the heavy work which was formerly done by him; and of necessity, some means of lightening his labors must be found. Production costs are high enough these days under good methods of operation without allowing unnecessary labor costs to become a predominating factor.

Neglecting the humane reasons for the installation of perfected mechanical apparatus, it is the call to highest possible efficiency, brought about by the demands of the present day and the tomorrow that is to come, with ever increasing con-

tentions and difficulties that we must expect to have with us for a few years hence. More and more mechanical and electrical equipment is entering the brick and clay plant, and more and more is urgently needed.

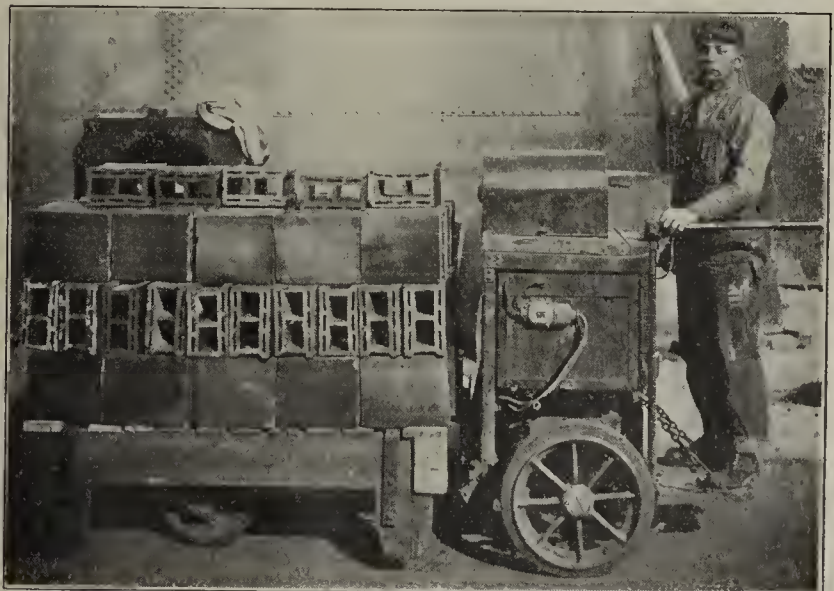
Those who but a short time back may have thought that certain devices were unnecessary, are now hearty advocates of these identical contrivances, and why? Simply because they actually have used such equipment, and it has not been found wanting; they have noted startling contrasts, both in operation and financial returns.

The clay products manufacturer today who operates his plant with the attitude of, “Oh! I can get along without that,” when something really essential is presented, still has his lesson to learn and the longer he waits, just so much the harder will the moral attached to that lesson come. This is the time for action and decision—the man who waits is the man who loses.

The progressive and enterprising clay works owner has seen the trend of the times; he has seen his competitor move for reduced overhead costs and for greater operating efficiency, and he has taken the “tip.” An example of modern methods here, a mechanical installation there, a unified working for betterment in every possible way, has shown possibilities never before realized. And when costs of production are mentioned in trade circles, his average is among the lowest. This is the kind of stuff that counts.

FIRST COST BUGABOO

First cost is not everything, nor does it always carry the excessive outlay that some imagine. If a certain mechanical



Here is Shown an Electric Truck Used for Moving Hollow Tile on a Clay Plant.

installation that is needed, whether it be storage battery trucks, cars, conveyors or the like, will pay for itself within an estimated period of time and make for decided improve-

ment in plant operation, with increased efficiency, it is worthy of careful investigation. In reality, the matter is simply one of a little calculation.

Presume, for instance, that the introduction of a particular means of mechanical operation at a clayworking plant shows a cost of about \$1,500, and that this new equipment or system will bring a saving of about \$2 a day in labor, certainly a small enough figure to base calculations. This is a saving



The Above Illustration Shows an Industrial Truck Depositing Coal. This Particular Truck is Propelled by a Gasoline Engine.

of close to \$600 a year, or 40 per cent. on the investment. Surely, this would seem a wise expenditure, and, moreover, it is more than likely that a still greater saving would be effected after operation was perfected. Taking the \$1,500 alone it looks like a considerable sum; carefully considering what that \$1,500 will accomplish, makes it look small. It is only a matter of viewpoint and sensible calculation.

STORAGE BATTERY INDUSTRIAL TRUCK

An interesting development in ceramic plant betterment has been brought about thru the introduction of the storage battery industrial truck. This means of handling materials has many times demonstrated its utility and facility in different departments of works operation. It has shortened the time element for the accomplishment of a certain amount of work, it has lightened labor and reduced the number of workers necessary for such work, and simplified plant procedure to a remarkable degree.

That the storage battery industrial truck is a needed accessory in any well operated burned clay or affiliated plant is unquestioned. It is the modern means of handling materials of many kinds, and during the past few years has supplanted the hand truck and wheelbarrow to decidedly advantageous ends.

Taking a specific example, such as the transportation of finished ware, consider what has been accomplished. With the use of wheelbarrows or hand trucks more men and greater time for specified work are necessary; kilns are emptied much slower, and time so consumed could be profitably employed in burning or producing ware; the per cent. of breakage is higher by far than under the modern plan.

Under ordinary conditions, the use of the storage battery industrial truck will save from two to four men; the truck can move about more than twice as fast as a man with a hand truck or wheelbarrow; it is flexible and can be operated and turned, as required, in a small area; it will carry, without trailer, three to eight times as many brick as a wheelbarrow, and accordant increase in other finished wares; with trailers, it will carry much more; it is built to stand up under hard service and excessive utility.

Comparing these features of operation, each of relative importance, is it any wonder that the storage battery industrial truck is becoming popular in ceramic plants, and is

growing more and more so every day? Its use means the standardizing of operating methods in the right way.

The industrial truck was introduced in the brick plant a number of years ago, and was found to be highly successful. Drain tile yards have also found them of good advantage. Crude methods, calling for improvement, of moving sanitary ware from the manufacturing departments into the kilns and then again from the kilns to the stock room, are employed in a number of plants. One plant has already adopted a monorail system of conveyance. There is no doubt but that the industrial truck with trailers could be used to excellent purpose in such cases as these.

ELEVATING PLATFORM TRUCK

An effective type of industrial storage battery truck which has been perfected is the elevating platform truck. This car under standard specifications has a loading platform 26 in. wide by 59 in. long, with normal height of 11 in. from the floor and raised height of 15½ in., making the lift 4½ in., and which can be accomplished in about 10 seconds of time. The truck is equipped with cast steel wheels of pressed on type, with front tires, 20 x 3½ in. and rear tires 10½ x 5 in. It is possible to steer with either front or rear wheels, bringing great flexibility to operation in the plant; the turning radius of the truck, outside of wheels, is 5 ft. 8 in. The motor for the operation of the car is located in the front wheel.

This truck has a length over all of 106 in. and width of 37¾ in. over all, the wheel base is 55 in. The speed is from 2 to 7 miles per hour, with speed arranged under multi-voltage control, with two forward and two reverse speeds. The car has a capacity of about 4,000 lbs. and with battery equipment weighs from 2,600 to 2,700 lbs.

The truck is designed to be used with skips, or wood platforms of a little larger size than the platform of the car, and of right height to engage the car platform. These skips are stacked with ware, the industrial truck is run under when removal to another location is desired; the platform of the car raised and so lifting the skip and its load from the floor, with weight on the truck platform, and ready for moving



This View Shows Another Industrial Truck Having a Gas Engine for its Motive Power.

to any location. On arriving at destination, the truck platform is lowered and the skip again rests on the floor; the truck is immediately pulled away and available for service in any other part of the plant.

The elevating platform truck is proving of exceptional service in different ceramic plants. The ease, simplicity and rapidity of performance makes possible a large amount of work, and in a space of time not to be mentioned with ordinary methods as heretofore used. It will save the work

of some few men and overcome many difficulties frequently encountered in handling various commodities.

TRAILERS

In connection with the operation of the storage battery industrial trucks, cars can be used as tractors, with three, four or such number of trailers, carrying equal loads, as might be desired. Trailers for this service are constructed with loading platforms.

The wheels of the truck are of cushion type, with tires about 16x3 inches. It is possible to steer with either the front or rear wheels, while the turning radius of outside wheels is 4 feet 9 inches. The trailer will turn on intersecting aisles 4 feet 6 inches wide. The capacity of the truck is about 4,000 pounds.

The use of trailers of this type brings about increased possibilities for handling extra large loads at a single haul, and are capable of operation with a minimum amount of labor. For bulk or boxed material the same facility is afforded, or for a variety of wares, making possible the delivery of different materials, as loaded on the trailers, at various locations in the plant.

Not all industrial trucks are operated by storage battery. A machine which has recently been developed is driven by gasoline engine and resembles other industrial trucks in all ways except for the type of motive power. It has found successful application in a number of different industries and many foundries, particularly, use them in the factory. This form of truck is best exemplified by the machine known as the Clark tractor. It has a capacity of one and one-half tons and sufficient power to pull heavily loaded trailers at the same time. Besides being able to pull trailers it has been used to push loaded freight cars in new positions, and in this respect would aid clay plants in spotting cars.

Some of the specifications of a cargo body type are: weight, 2,050 pounds; wheel base, 72 in.; turning radius, 72 in.; over all length, 112 in.; over all width, 42 inches; ground clearance, 9½ inches; body size, 50 x 36 x 19 in.; capacity, 1½ tons; speed, ¼ to 15 miles an hour; and the gasoline consumption is about 3 gallons a day under ordinary operation. The engine is a four-cylinder and twenty-five horsepower motor.

The tractor will travel thru snow, sand or rough ground with ease and should be an excellent piece of equipment to use to distribute coal to kilns and may also be adopted to haul brick, tile, sanitary ware, and other ceramic products to and from the kilns, and in general, be used for interdepartmental transportation.

The months to come will show ever increasing use of the storage battery industrial truck in progressive ceramic plants in all parts of the country, and right so. This type of inner-works conveyance has demonstrated its efficiency in numerous ways, has shown what can be accomplished at minimum expense of time and labor in the matter of haulage, and has produced great satisfaction among plant owners and employees.

* * *

New Brick and Tile Plant For Cleveland

A new brick and tile plant for Cleveland, Ohio, is expected to be in operation within a few months. Preliminary plans for its construction and operation were being completed this week by Herbert F. Geist, head of the Geist Building Material Co., of Cleveland, who is organizing a company to that end. The plant will be located on the West Side of Cleveland, within the city limits, on a site which will be decided upon within a week or so. Hollow tile will be the principal product, but a considerable quantity of shale brick also will be made, according to Mr. Geist. It will be a large plant, but the

production will not be known until details have been worked out.

"We believe the time is opportune at the moment for the production of additional tile and shale brick for the Cleveland district," says Mr. Geist. "There is without a doubt a shortage of hollow tile, and this eventually may result in holding up the big building boom now on in Cleveland particularly, and northern Ohio generally. Our production, according to our present plans, will be confined primarily to Cleveland building needs."

* * *

Building Permits Fall Off in Louisville

The general demand for brick and other clay products is not quite as keen this month as it was last month, according to manufacturers and jobbers, and the reports of the Building Inspector's Department bears out the statement that business has fallen off somewhat since June. It seems that a number of contractors and builders, as well as private owners undertook to erect a few residences in June. The investment builders have since had an attack of cold feet, and are completing the work in hand and taking on very little new work. A number of general contractors are accepting work on the percentage or commission basis only, and will not quote flat rates, due to uncertainty concerning labor and material.

The City Building Inspector's office at Louisville, Ky., gave the correspondent of *Brick and Clay Record* the following figures on June and July of 1918 and 1919:

Permits		Total	Permits		Total
June, 1918.....	137	\$178,512	June, 1919.....	239	\$473,503
July, 1918.....	106	207,775	July, 1919.....	187	438,215

In June an increase of 32 per cent. in permits, and 62 per cent. in costs was shown, and in July 43 per cent. in permits, and 52 per cent. in costs, as compared with the same months of last year. In June of 1918 permits were larger than in July of that year, but the total for July was greater, whereas both the number of permits and value fell off in July of this year, as compared with June of this year.

* * *

H. C. of L. Probe in Ohio Involves Building

Investigation of the high cost of building supplies is expected to follow the state wide probe of high food prices in Ohio, following the alleged protest of house builders. Contrary to any expectations that might have been made, building supply interests will cooperate with any investigation started along this line, according to W. T. Rossiter, general manager of the Cleveland Builders Supply and Brick Co. He points to the fact that his concern has not advanced prices recently, in spite of the fact that production costs have mounted. It is Mr. Rossiter's contention that brick and tile prices in Cleveland are lower than in other large cities, which seems to be proved by the fact that people from other cities are coming to Cleveland for these materials. Cleveland will be served first in this connection, however, asserts Mr. Rossiter. The Supply Dealers Board of Cleveland, according to President Herbert F. Geist, will cooperate by supplying any information desired.

Robert C. Mitchell, manager of the brick department of the Cuyahoga Builders Supply Co., has been appointed a director in the recently organized Superior Brick Co., Cleveland, Ohio. Mr. Mitchell may be considered as the first truly brick man to join the new company, so far. He has taken it upon himself to sell the balance of unsubscribed stock, and has sold \$15,000 stock already.

COMPLEXITY *of* RAILROAD SITUATION AFFECTS CLAY INDUSTRY RATE PROBLEM

Clay Products Manufacturers Are Expected to Call Upon Congress to Inform It of the Burdens the Industry Is Required to Bear Unjustly

By Waldon Fawcett

COME YE UNTO ME with your transportation troubles. This is the invitation which Congress has lately extended to the clay products industry, along with other lines of business, and the indications are that it will be accepted with alacrity. Leaders in the brick and tile industry have been so busy, for several months past, in perfecting their appeal for relief to the Interstate Commerce Commission and making ready to back it up with brass-tacks evidence that they have had little time to call directly to the attention of Congress the burdens under which the industry is groaning. Now, however, with a two-month waiting spell before the Commerce Commission will be ready to harken officially to the recital of the industry's woes there is an opportunity to "carry the case to Congress."

Some of the captains of the industry have, during the past few weeks, raised the question of whether the brick and tile organizations were not making a mistake in concentrating all their persuasive efforts on the "supreme court of the railroads" and devoting so little "missionary work" to Congress which, after all, will have to solve permanently the railroad question incident to its determination of a future policy for the railroads. However, it seems that no harm has been done by this temporary neglect by clay products interests of a direct effort to mold Congressional sentiment, because the national legislature is but just now ready to take up this whole railroad issue in earnest.

A committee of the United States Senate undertook, awhile back, to sound public sentiment thru the medium of open hearings, but the Senate has since become so engrossed with the league of nations debate and other international problems that it seems plausible that it will be left to the United States House of Representatives to initiate an attempt at the disposition of our most serious domestic responsibility. Indeed, the Committee on Interstate and Foreign Commerce of the House has lately inaugurated a series of hearings designed to probe the whole subject of railroad ownership, control, management and the regulation of rates. It is likely that spokesmen for the various branches of the clay products industry will appear before this body to indicate the attitude of a body of shippers who are notoriously among the most unfortunate victims of the unscientific system of rate making heretofore in vogue.

By the by, it were just as well if the every-day brick and other clay products tradesmen came to a little better realization of how much is involved in this whole complex railroad problem that is going to give us no peace until it is settled and settled right. The average maker

or marketer of clay products is mightily interested locally in transportation problems, but he is prone to sidestep the national issue as leading him into a maze of technicalities. That estimate of conditions may be correct to a degree, but I wonder if our busy tradesmen would not be inclined to go into this proposition of pending railroad legislation a little more carefully if he realized that bound up with the obvious issue is the question of the amendment of the Clayton Act and the Sherman Anti-Trust Act in which many factors in the clay products field have manifested such keen interest of late.

Nor is it merely in the matter of rates for carrying charges that the railroads are just now on trial at Washington. The whole fabric of railroad organization and operation is under scrutiny and some of the changes of policy and practice that it is conceivable may result would affect mightily an industry that is so heavy a shipper as is the clay products trade. As samples of these side issues there may be cited the proposals to improve railroad efficiency by the joint use of terminals, the better use of equipment, economies resulting from various forms of consolidation, etc. The problem of credits likewise presents a significant aspect of this "inquest" on the railroads.

PUT OUR TRANSPORTATION HOUSE IN ORDER FIRST

It appears all the more important that the clay products industry should be "in right" on the railroad rate proposition in view of the accumulating evidence that it will be the policy of the national legislature to perfect railroad regulation before taking up seriously the question of Government ownership of the railroads. A few months ago it appeared that the question of Government ownership—or at least the extension for a period of five years of Federal control of the roads—might be hooked up with the rate question and might indeed overshadow it as a subject for early consideration. With so large a portion of the business public setting its face resolutely against Government ownership and with the President's intimation that he would turn the roads back to private ownership, this threatened contingency went into the background and the problem of rates again took the center of the stage. Now Congress, taking its cue from the sentiment of big and little business, seems set on the idea of putting our transportation house in order and talking about Government ownership later, if at all.

It is interesting to note that the first witness to appear before the Interstate and Foreign Commerce Committee in the hearings which were inaugurated the latter part of July was a transportation specialist whose views more

nearly approximated perhaps those of the leaders of the clay products industry than any other official. This student of America's present transportation dilemma is Mr. Edgar E. Clark, member of the Interstate Commerce Commission, and some of the statements that he made to the congressmen who are charged with the duty of framing a national railroad program are calculated to make brick and other clay products men all the more insistent for remedial action that will, incidentally, put them on a plane of equality with other classes of shippers instead of, in effect, discriminating against them for all that their commodities are among the easiest to handle known to traffic.

In the course of his remarks, a few days ago, Commissioner Clark said: "It is obvious, it seems to me, that if the roads are turned back to private ownership they must be able to increase the operating income as compared with what it is now either thru a largely increased volume of business or thru economies of operation and by that I do not mean reduction of wages, because, I think, nobody suggests that as a desirable or even possible move, or they must be faced with an operating deficit.

"There are economies that are substantial in their character and good in their nature and effect, but they would fall far short of meeting any such deficit as now confronts the operation of the railroad properties. Therefore, the probability of a raising of rates, or as some put it, the inevitability of that, has been said by many, even of the representatives of the shippers, to confront us. They say it is bound to come. A few days ago a representative of shippers from the Far West said: 'We are up against another increase of rates and we know it.'

OPERATING ON A HIGHER LEVEL OF PRICES AND COSTS

"I do not expect to ever see what we term normal conditions as they were before the war. I believe that the entire nation is on a higher level of prices and costs which will be permanent. I do not believe that labor will ever work again for the wages that it worked for prior to the war or that living costs will ever go down to where they were. The difficulty is not so much with the fact that the wages are high and other costs are increased, but the normal conditions, the stable conditions are those under which a proper relationship of cost and production and living may be said to have assumed a somewhat stable position. Once the relations are established the level is not of so very much importance. I expect to see in the course of a few years a reduction in the general level of costs and prices, but I do not believe that they will ever go back to where they were before the war."



House Building Program Gets Under Way in Cleveland

First definite step toward a comprehensive house building program in Cleveland, Ohio, was taken recently when officials of many industrial plants united in forming the Industrial Housing Co. The plan calls for the investment of perhaps \$5,000,000, and the construction of homes for working people identified with the organizations included in the new company, and also for salaried employees. The activities of the new company will extend further than this, for they will include the buying and selling of land, houses, construction of houses and the financing of real estate projects linked up with the movement.

Stockholders, besides the officials of the industrial concerns, will include only representatives of real estate, construction and financial interests identified with the movement, and em-

ployes of the concerns backing the program. It will not be required of employes that they be stockholders, but they will be given an opportunity to invest.

The movement will be singularly different from other factory home projects, in that the company will build in allotments that are desirable, or in any parts of the city that appear to be feasible for the project. The operations will extend all over the county.

Only a small profit to provide for unforeseen contingencies will be sought in any individual transaction with factory employes. The size of the project is such as to assure the minimum cost of construction, and this will mean low prices for the purchasers. The plan for this season is to build 400 houses, and as this is but the beginning of many similar projects to be carried on in the future, it will be seen that material bought in quantities sufficient to meet these needs can be purchased at low figures.

The movement will also include the locating of factory sites near allotments for houses, as well as construction of houses adjacent to present industrial plants, in order that the least time and carfare may be spent by employes in going to and from their work.



Cleveland Building Now Depends on Amount of Material Which Can Be Produced

Building boom in Cleveland, Ohio, seemingly at its crest, now will continue upon the present high rate of construction largely thru the ability of the manufacturers and dealers to produce and distribute the material. The most significant shortage that has developed in the last few weeks has been in hollow tile, altho this material of late is coming thru in more sizable quantities.

This would be necessary anyway, however, for big projects continue to be placed with contractors here and local firms are getting the orders for the material. Among the recent big contracts have been some placed with the Cleveland Clay Products Co., of which Leo A. Krueger is president and general manager. One to this firm is for 125,000 Alliance brick for the Detroit Avenue M. E. Church, at Detroit and Winchester avenues, Lakewood, another for the terra cotta on the American Savings Bank, Huron Road, Cleveland, and still another for 50,000 Oriental brick for the Cleveland Street Railway Co.'s barns at Harvard avenue and East 49th street. The Drew Electric Co. also will take 30,000 Oriental brick for its Collamer-Euclid plant.

The Hydraulic-Press Brick Co. is turning down some large orders because of inability to assure delivery. There is no use accepting orders unless clients can be assured of getting the material, says O. R. Leach, service manager. This firm is concentrating upon meeting the needs of the regular customers who have been buying right along.

H. F. Kemper, manager of the American Face Brick Co., is now using most of his efforts toward getting brick rather than toward getting business. With little effort the latter can be closed easily, reports the energetic Mr. Kemper, but there is not enough brick to be had to meet this demand. Mr. Kemper now is negotiating with manufacturers to supply his firm with material.

Example of the sudden impetus to building during the last few weeks is indicated by the permits issued during July. The figures exceed all previous records for the same length of time. More than \$5,165,000 is the amount involved on all structures. This is \$100,000 in excess of the previous record made in May. The principal outlay of this amount is \$2,828,000 for brick buildings, and \$1,812,000 was spent for brick houses.

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products Such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

SOME ASPECTS ON BALL MILL GRINDING*



company.

HERE ARE several different types of ball mills in use today, which all produce the same results in the grinding of clay slips, but they vary somewhat as to efficiency. At the Lenox pottery cylindrical mills lined with porcelain blocks, and run on babbitt bearings are in use. The mills, which are six feet long and five feet in diameter, will hold a batch weight of 4,000 pounds dry materials, and have been found most satisfactory for the requirements of the

In the casting process at the Lenox plant, it is necessary to maintain a clay slip of a uniform viscosity and a uniform firing body. Some of the molds are very complicated, being made up of seven and sometimes eight different sections. To cast ware successfully from these molds the slip must have a minimum shrinkage in clay state and must readily relieve from the mold.

We also manufacture a number of shapes which must fit into silver frames, and a variation of one-sixteenth of an inch in diameter after firing would mean a total loss on that article.

Some of the most important points for consideration in ball mill grinding are as follows: (1) Effects of time in grinding; (2) Weight of Flint Pebbles and their wear; (3) Measurement of water; (4) Record of revolutions of mill.

The exact time of grinding a clay slip should be determined by experimental work, bearing in mind the amount of clay substance in the charge. The clay substance only requires enough grinding to thoroly mix with the coarser ingredients, which should be thoroly ground before adding the clay. By over-grinding the clay substance it is quite possible to destroy some of the good working qualities of the clay which are most necessary.

Formerly all of the scrap clay at the Lenox plant was re-ground in ball mills to return it to a slip. It was our experience that the strength in dry clay state was considerably weakened, so much so that it was extremely difficult to place the ware in saggars without breaking. At the present time, we are blunging all of our scrap-clay, and are having excellent

results. The texture of a ground body is most important to render it suitable for the class of ware required.

The weight of flint pebbles in a mill demands study, as there is considerable wear on these, which add silex in a small amount to the mix. In general ware, or hotel ware, the writer believes that the small amount of silex added would be no serious objection. In the practice at the Lenox plant, this is calculated, and an allowance made for this addition to insure uniformity.

The proportion of water to body mix should be carefully determined and then metered to maintain an equal amount of water in each charge.

We use a disc meter made by the Hersey Manufacturing Co., of Boston, and it has proved very satisfactory.

The degree of fineness required by the potter may be obtained by the number of revolutions of the mill. To maintain the same degree of fineness, we have indicators which record each revolution of the mill, and we grind to the number of revolutions required.

Stress cannot be laid too greatly upon the conditions which the elementary materials require to fit them perfectly to meet the various stages thru which they must pass in the working processes required in the formation of pottery wares. Of course, the quality of the materials is of the first importance, but under our consideration of their treatment in ball mill grinding, the condition of the materials becomes of primary technical importance, particularly as to their uniformity and adaptation to the kind of wares required.

These conclusions we have arrived at thru the costly experiences thru which we were obliged to go to obtain the excellence for which the Lenox wares have become so celebrated.



Potters Ask Flat Increase of 25 Per Cent

A special meeting of the United States Potters' Association was held in the Fort Pitt Hotel, August 5, to consider the demands just made upon the trade by the workers, the latter being affiliated with the National Brotherhood of Operative Potters, headquarters of which are at East Liverpool, Ohio. Every general ware pottery manufacturer in the country, including those manufacturing vitreous hotel china have been asked for a flat increase of 25 per cent. in addition to the workers asking for an increased price for making certain items.

At the Pittsburgh meeting, the views of all manufacturers were obtained, and country propositions which were worked out have been given into the keeping of the Labor Committee of the Association, which will meet with the conference committee of the workers probably September 2 in the Hotel Chalfonte at Atlantic City. At the eastern wage conference the propositions of the two sides will be threshed out. Many workers are of the opinion that the manufacturers cannot grant the stiff increase asked, but that the trade will be granted some concessions in the way of wage increases.

The present wage agreement between manufacturers and

*Paper presented at meeting of New Jersey Clay Workers' Association, June 24, 1919, by Leslie Brown, Lenox, Inc., Trenton, N. J.

workers expires October 1 next. There will be no discussions on the sanitary pottery scale, as the two branches take alternative years in adjusting wage differences. However, a few weeks ago the sanitary workers were granted an increase of 15 per cent.

Official text of the demands made upon the manufacturers by the general ware branch of the trade is as follows:

That jiggerman working on conveyor type of stove room shall be paid day wage, at the rate of \$1.00 per hour.

That the present system of placing kilns by cubic measurement be abolished and a day wage system adopted. The bench boss to be paid \$1.12½ per hour, and journeymen kilnmen \$1.00 per hour. The rate of pay for apprentice kilnmen shall be as follows: First six months, 50 cents per hour; second six months, 70 cents per hour; second year, 90 cents per hour, and third year, \$1.00 per hour.

All kilnmen start to work at 7 a. m., quit at 9:30 a. m., for lunch, start at 10 a. m., work until 12 m., start again at 1 p. m. and quit at 4 p. m. When required to work overtime the rate of pay shall be time and one-half.

That blocking and casing shall be paid at the rate of \$1.00 per hour.

When it is necessary to work day wage all clay workers shall be paid at the rate of \$1.00 per hour, the manufacturers to pay all help. Eight hours shall constitute a day's work, and anyone compelled to work over eight hours shall be paid time and one-half for such work.

That all piece work packing be abolished and eight hours shall constitute a day's work at the rate of \$7.00 per day with time and one-half for all overtime, and double time for Sundays and holidays.

That an increase of 25 per cent. on present wages be granted to all branches of the general ware and china trades.

That the rule governing apprentice saggermakers be changed to read three years instead of four years. The firm to pay the apprentice for the first two weeks and the apprentice must remain in the employ of the firm until he finished his trade.

That the following changes be made in the wage scale for cast and pressed articles:

Boats, when pressed, shall be 60 cents per doz.; Cable Boats, when cast with handle on, 47 cents per doz.; stuck on, 50 cents per doz.; 12's Cable Ewers, 85 cents per doz., cast or pressed; 9's Cable or Toilet Ewers, \$1.00 per doz., pressed or cast.

4's Jugs, pressed or cast.....	\$1.00 per doz.
6's Jugs, pressed or cast.....	.75 per doz.
12's Jugs, pressed or cast.....	.65 per doz.
24's Jugs, pressed or cast.....	.50 per doz.
30's Jugs, cast, handles stuck on.....	.46 per doz.
30's Jugs, handles cast on.....	.42 per doz.
Mouth Ewers.....	.65 per doz.
Restaurant Creams, handles cast on.....	.16 per doz.
Restaurant Creams, handles stuck on.....	.18 per doz.
Tankard Creams, 0's, XXX handles cast on.....	.25 per doz.
Tankard Creams, 0's, handles cast on.....	.25 per doz.
Tankard Creams, 1's, handles cast on.....	.21 per doz.
Tankard Creams, 1's, handles stuck on.....	.24 per doz.
Tankard Creams, 2's, handles cast on.....	.21 per doz.
Tankard Creams, 2's, handles stuck on.....	.24 per doz.
Saxon Creams, 3's, unhandled.....	.60 per doz.
Cast Pickles, one in mould.....	.25 per doz.
Rocaille Individual Creams.....	.28 per doz.

That clay and slip be delivered to the bench of the workman using same, and all scraps and cuttings removed at the expense of the firm.

That all plain edge plates, coupe soups, deep plates, oat-meals, 5-inch fruits and berry saucers be increased one-half cent per dozen, and plain individual butters increased one-fourth cent per dozen, and all inside nappies from 6-inch to 10-inch be increased to 10 cents per dozen straight; and that finishers be granted festoon prices for finishing all items of regular weight plain edge ware.

That all china shapes shall pay china prices.

That cup makers be paid for all cups that go in damp cellar or receive six dozen to the hundred dozen, count after turner.

That festoon price be paid for all plain edge dishes and bakers.

That all clayworkers be paid at the rate of 62½ cents per hour for carrying in new molds or throwing out old molds, for changing molds, and for putting in new flags and throwing out old flags.

That the present size list for dishes and bakers be changed to read block measurement; to take effect the first full pay after October 1, 1919.

That the articles here mentioned, for handling, be increased as follows: Hotel and half-thick cups, from 4½ cents to 5 cents; block coffee cups, from 4 cents to 4½ cents; block tea cups, from 3½ to 4 cents; block A. D. cups, from 3½ cents to 4 cents; hotel dairy mugs, from 6 cents to 8 cents.

That semi-hotel items be paid regular hotel prices for turning.

That the articles here mentioned, for turning, be increased as follows:

St. Denis teas, complete, from.....	3	to	3½ cents
St. Denis coffee, complete.....	3½	to	4 cents
St. Denis teas, topping and polishing.....	1½	to	2½ cents
St. Denis coffee, topping and polishing.....	1¾	to	3 cents
Tulip teas	4½	to	5 cents
Custard, with stalk foot.....	8	to	9½ cents
Double egg cups, made solid.....	9	to	14 cents
30's dairy mugs.....	8	to	8½ cents
24's dairy mugs.....	9	to	10 cents
24's regular cable mugs.....	8½	to	10 cents
30's regular cable mugs.....	7	to	8½ cents
36's regular cable mugs.....	7	to	8½ cents
42's regular cable mugs.....	6	to	7½ cents
Single egg cups, made solid.....	6	to	10 cents
24's Bowls	6	to	8 cents
30's Bowls	5½	to	7 cents
36's Bowls	5	to	6 cents
Cups carried out, unhandled, ½ cents per doz.			
30's hotel cable sugar bodies.....	6	to	7½ cents
Hotel cable sugar covers.....	6½	to	8 cents
24's oyster bowls.....	9½	to	10 cents
30's hotel oyster bowls.....	8½	to	9 cents
36's hotel oyster bowls.....	7½	to	8 cents
42's hotel oyster bowls.....	7	to	7½ cents

That a uniform thickness of ware be established.

That whenever kilnmen are compelled to wait for a kiln, saggars, ware, etc., they shall be paid regular kilnman's wages.

That dippers shall receive 88 cents per kilnman's day, and the boss dipper shall receive 12½ per hour extra for running the dipping house. All double banjoes placed in the middle of kiln in excess of five bungs shall be paid for at the rate of 10 cents per bung extra. Wauvers on each bung shall measure not less than 12 inches in height, and where no wauver is used the dipper shall receive one cent per bung. The increase asked for in proposition six shall apply on the above prices.

That no apprentices be started in any trade where journeymen are available. Any firm desiring help shall make application to the N. B. of O. P. and if at the end of two weeks the N. B. of O. P. is unable to furnish a journeyman the firm shall be given permission to start an apprentice. When a journeyman is required to lose time teaching an apprentice, he shall be paid by the firm for the time lost.

That the ratio for apprentice warehousemen shall be one apprentice to every five journeymen. When an extra apprentice is allowed to start at this branch of the trade the oldest apprentice shall be paid the journeyman rate of wages during the balance of his apprenticeship.

That no women be employed to do warehousemen's work without permission from the warehousemen's local. If women are permitted to do said work they shall be paid the warehousemen's scale of wages.

That the ratio of apprentices in the decorating shop shall be one apprentice to five journeymen.

That such work as whitewashing bats and props, assembling new racks, cleaning out pits, fixing and repairing old racks, and whitewashing new kilns shall be considered extra work, and when decorating kilnmen are required to do such work they shall be paid the same rate per hour that they receive for their regular work.

That in case a packer goes to work in the morning and there is no packing to be done and the firm insists that he remain in the shop, he shall be paid at the day wage rate for such time, and in case the firm has a few packages to be packed in the afternoon and not enough to make a half day's work he shall be paid a half day's wages at the day wage rate.

That where wagons or trucks are to be packed, they shall be packed by regular packers.

That eight hours shall constitute a day's work in the putting

trade, and no clay worker shall begin his day's work before 7 a. m., nor work after 5 p. m.

That all potteries suspend work at noon on Saturday, and pay not later than noon on pay Saturday.

That all mold shops be equipped with satisfactory dust prevention appliances.

That all shops be swept and all refuse removed from the floor each working day after 5 p. m. and before 6 a. m., at the expense of the firm.

In order to correct conditions in the kilnshed and workshops that are detrimental to the health of the workers, we request that before the beginning of cold weather an effort be made to eliminate all unnecessary draughts by pointing-up the openings around window frames; that windows be repaired, and where necessary storm windows be installed, and at least two large pot stoves be installed for each kiln crew where other means of heating are not available.

That where kilns are fired with coal they shall not be lighted before 4:30 p. m.

That all roofs and floors be kept in good condition.



Pittsburgh Section Makes Membership Drive

The Pittsburgh District Section of the American Ceramic Society is making a strong drive for increased membership in its district. This section derives its membership from the western part of Pennsylvania, part of Eastern Ohio and West Virginia. It has perhaps the most fertile district of any of the sections from which to draw from and should be a leading division of the society. Secretary Frank H. Riddle has mailed the following letter to prospects in his district and all interested in this organization will find it well worth while to join:

Our Section has Charter No. 1, because the Beaver members, seeing the desirability of expansion, generously arranged to transfer the charter, changing the name to the Pittsburgh District Section. Our district includes the western part of Pennsylvania, part of Eastern Ohio and West Virginia.

Over one-third of the members of the Parent Society are in our District. We also have over three hundred heavy clay products plants, sixty potteries and one hundred and fifty glass plants. A total of over FIVE HUNDRED AND TEN FACTORIES. One member from each plant would mean nearly half the membership of the Society. One paper a year from every tenth member would mean that our District would furnish three quarters of the papers published.

This is what we MUST do if we are to do our share, or even if we want to be a factor in the work of the Society.

It is squarely "up to you" to decide NOW what you are going to do to make next year's meeting a success. It is not too soon to collect data for a paper.

Don't forget that we will probably meet in Divisions and that you will get more information of particular interest to you than ever before. Also that those who are interested in the problems you have will be there, and you will have lots of time for discussions. This means that you and those interested in your problems will have to do more than has been done formerly.

This expansion means that, altho there will probably be as many technical papers as before, there will also be opportunity to give, and demand for more papers on practical operating problems.

If you have a problem of any sort that you think would be of interest, work it up into a paper. If you have the information but do not feel that you care to write the paper, get in touch with the secretary and he will arrange to have the paper written so you can present it to the Society.

The Society must grow, and systematic team work must be used to make it grow. The Pittsburgh District Section must do its share, and it is in a position where it will have to do at least half of all that is done to even hold its own.

Have you paid your year's dues for membership in the Section? If not, please send your check for One Dollar (\$1.00) to the treasurer, Mr. Thomas Sant, at East Liverpool, Ohio; or to the Secretary for forwarding to Mr. Sant.

Also send in the names of those whom you think will be interested in joining either the Section or the Society; better yet, write the Secretary of the Section for membership blanks and get the credit for yourself of securing some new members.

A membership blank could have been enclosed with this

folder. It is not our intention to burden any one with these blanks. They are valuable and will not be sent unless you have use for them. Send for some now if you are going to be one of the Live Pushers.



The demand for chinaware continues to be the big feature of activity among the potteries at Trenton, N. J., and there is apparently no let-up in sight for the calls for this material. A number of local potteries engage in this branch of production, ranging from Lenox, Inc., probably producing the finest wares of this nature in the country, to plants manufacturing cheaper grades of material. Capacity production is being maintained and large shipments of material are leaving the city. In the electrical porcelain line, operations are assuming a near-normal status and the resumption from a little lag experienced in earlier months of the year is taking on the aspect of big business in this direction from now on. In the sanitary earthenware line, things are coming around in splendid fashion and the strong tone of building construction is being felt at the different potteries devoted to this phase of ceramic production. With current indications realized, these plants will resume at capacity operations at a not remote date. They are growing near it as the days advance.

Employees of the Thomas Maddock's Sons Co., Trenton, are perfecting plans for their annual outing, and a committee to handle the affair has been appointed as follows, to be known as the General Outing Committee: E. D. Anderson, chairman; William Burchell, sports; Harry Nicklin, refreshments; and Joseph T. Sullivan, transportation. It is planned to hold the gathering either on August 16 or August 23, at Burlington Island or Springdale Park; the exact selection of place will be made at an early date. The outing is for the men and women at the works and their families, and a large attendance is anticipated.

Pottery interests at Trenton, N. J., were prominent in contributing specimens of ware for prizes at the stag picnic of the local Chamber of Commerce, the Rotary Club and the Kiwanis Club at Springdale Park, near Yardville, on July 30. Contributions were received, among others, from Charles Howell Cook, president of the Cook Pottery Co.; Thomas Maddock's Sons Co.; Monument Pottery Co.; Star Porcelain Co.; Lenox, Inc.; and the Maddock Pottery Co.

The Pittsburgh American China Co., which has a plant at Falls Creek, near DuBois, Pa., has decided to locate at South Greensburg, Pa., having bought a large site from the Keystone Coal & Coke Co., of that place. The plant, when in full operation making vitreous hotel china will give employment to several hundred people.

The Keystone Pottery Co., New York Avenue, Trenton, N. J., specializing in the production of sanitary earthenware, has filed plans for the erection of extensions at its plant to cost about \$5,000. The Resolute Pottery Co., has also taken out a permit to build a small frame addition to its plant on Third Street.

With a capital stock of \$15,000, the McDanal Refractory Porcelain Co. has been formed at Beaver Falls, Pa. The incorporators are Oliver Mitchell, of Chicago, Ill.; John D. Bruhn, of New Brighton, Pa., and Walter W. McDanal, of Beaver Falls, Pa.

The Trenton Porcelain Co., Trenton, N. J., is maintaining production at a good status at its local plant. The company is specializing in the manufacture of small products including knobs and other electrical goods.

The American Pottery Corporation, New York, recently incorporated in Delaware with capital of \$2,000,000, has designated S. B. Howard, 65 Cedar Street, New York, as its corporate representative.

The first firing of ware put thru at a new pottery erected last year at Keene, N. H., has just been finished with good results. Hereafter two kilns will be used, one for the "biscuit bake" and the other for glazing.

The Pfaltzgraff Pottery Co., York, Pa., is having plans prepared for a one-story hollow tile addition to its plant in the West York section. The structure will be used as a repair shop.

* * *

Ganister Production for 1918

The ganister or silica rock used last year in this country for making silica brick, ferrosilicon and furnace and converter linings amounted to 1,273,800 tons, valued at \$1,668,192. The quantity produced was 2 per cent. less than the year before, and the decrease shows a check on the rapid development of this industry, which in 1917 and 1916 increased its output 51 and 50 per cent., respectively, over that of the previous years. In 1918 the value increased 23.5 per cent.; in 1917 it increased 155 per cent. and in 1916, 58 per cent. In 1918 the average price per ton was \$1.31; in 1917, \$1.04, and in 1916, 62 cents. The advance in price in 1918, as in 1917, was due mainly to increase in the cost of production, and the decrease in output was due to scarcity of labor and the cessation of demand after the armistice was signed.

In 1918, 55 plants reported operations, 30 of which were in Pennsylvania, six in Wisconsin, five in Colorado, and three in Ohio, and the remaining plants in eight other states, in none of which were there more than two companies.

Pennsylvania produced 77 per cent. of the total output in 1917 and 67 per cent. in 1918. About 81 per cent. of the total output in 1918 was used in the manufacture of fire brick, about 13 per cent. for furnace and converter linings, and 6 per cent. for ferrosilicon. Pennsylvania is the largest producer of each of these products, 30 plants reporting operations in 1918, of which four were new.

The production of ganister in Wisconsin, where six plants were in operation, increased 24 per cent. in quantity and 82 per cent. in value in 1918. Practically all the output was used in making silica brick, a small portion being used for furnace and converter linings.

Ohio, the third largest producer, reported sales of 47,420 tons of stone, valued at \$101,681, all used for furnace and converter linings. This stone, unlike that produced in the other states reporting sales of ganister, is not quartzite, but the well known sandstone of northern Ohio, used principally as a building stone or for making grindstones.

Colorado produced 43,051 tons, valued at \$56,163, in 1918. These figures show an increase of 22 per cent. in quantity and 75 per cent. in value over 1917. More than half of the product is used for silica brick, and most of the remainder is sold to steel plants for furnace lining, only a small portion being used in the manufacture of ferrosilicon.

The production of ganister in Illinois, South Dakota, Tennessee and West Virginia increased in both quantity and value, and that of Alabama and New York decreased. Minnesota, for the first time, reported the sale of blocks for furnace and converter linings from the quarries at Sandstone. The material quarried near Rock Run, Ala., was used in the manufacture of fire brick. Illinois produced a cherty rock, locally called "novaculite," in Elco and Tamms, which was used in the manufacture of silica brick. The product of Maryland came from the vicinity of Cresapton, and was used in the manufacture of ferrosilicon. In New York ganister was quarried near Johnstown, and was used in the manufacture of ferrosilicon. The product of South Dakota was quarried near Sioux Falls, and was used about equally in the manufacture of silica brick and ferrosilicon, tho a quantity of cut jasper was sold for furnace and converter linings.

Tennessee produced a small quantity of ganister near Alton Park, which was used for furnace lining. West Virginia more than tripled its production in 1918, and the value of its product was nearly six times as much as in 1917. It was quarried at Great Cacapon and Berkeley Springs, and was used in the manufacture of silica brick and ferrosilicon.

* * *

Three Large Plants in New Merger

The plants of the Castle Clay Co., New Castle, Pa., the Youngstown Clay Products Co., at Volant, and the Carbon Brick Co., at Carbon, have been consolidated under one management and will be known in the future as the Liberty Clay Products Co., with headquarters at New Castle, Pa., and offices in the Safe Deposit & Trust Co. Building.

The capital stock of the company has been placed at \$500,000, of which a working capital of \$200,000 is available, a portion of which will be expended increasing the capacity and scope of the three plants.

The plants at Carbon and Volant are now in operation, while the New Castle plant is being rapidly placed in shape and will be ready the early part of August. A large force of men is now at work at this plant reconstructing the old kilns and getting things ready for operation.

Each plant will manufacture a special line of clay products, producing the products for which the material at hand is best adapted; the Volant plant turning out fireproofing and hollow block entirely, while the Carbon plant will manufacture common brick; face brick of different colors will be made at the New Castle plant. In this manner the new concern will be able to furnish the material used in the construction of a building from its three plants, heretofore, it being possible for one plant to furnish but the one type of brick and materials for the construction of large buildings. Practically every kind of brick that is used for construction purposes will be manufactured by the new company. F. R. Kanengeiser, general manager of the Bessemer Limestone Co., and director of the Metropolitan Paving Brick Co., at Canton, is president of the new organization, while the plant management will be under the direction of P. A. Kanengeiser, who is vice-president and general manager and H. H. Bartells, secretary and treasurer.

The directors are: F. R. Kanengeiser, H. H. Bartells, E. E. Holloway, manager of the Youngstown Ice Co.; Le Mar Jackson, of the Carbon Brick Co.; Bruce Campbell, president of the Struthers Saving & Banking Co.; James Morgan, of Youngstown, and S. D. Pearson, of the Pearson Brick Co.

* * *

Brick manufacturers at New Britain, Conn., which is in the heart of the Connecticut brick yard district, estimate the output for the present season at about 50 per cent. of normal and many of them predict higher prices as a result of the demand which is sure to result from the reduced production. At present brick in this state is quoted at \$16 per thousand. Discussing the situation Fred H. Holmes, of the Holmes Brick Co., says: "There has been a noticeable increase in the demand for brick recently as a result of the building booms in this vicinity, building work requiring approximately 6,000,000 brick being in sight. The brick production of probably 100,000,000 which may be obtained this year may not meet all requirements. Ordinarily Connecticut produced 200,000,000." Brick yard workers, Mr. Holmes points out, are receiving much higher wages than ever before and the inability to meet the demand makes a price advance probable. Every effort is being made to increase production.

The SUPERINTENDENT

Helpful Hints for Practical Men
Whose Problem is Maximum
Production With Minimum Cost

The VALUE *of* SPECIFIC GRAVITY *of* RAW MATERIALS

By D. E. Humphrey

*Reprinted from "Transactions" of the American
Ceramic Society*

FEW CLAY MANUFACTURERS seem to appreciate the value in the use of simple specific gravity methods in determining the weight per cubic yard or cubic foot of raw material, or its use in giving a clue to the quality of different parts of the bank.

It is often difficult to pick out the objectional parts of a shale bank by observation. If the specific gravity of a lump from a certain strata is much greater than the specific gravity of other parts of the bank, it is a good plan to burn a few lumps of both kinds to ascertain their qualities under fire. The appearance in the bank is often quite similar. I have seen the specific gravity vary from 2.46 to 2.63 in a six foot vein of clay, with a marked difference in the firing qualities of the two extremes. It may show that a certain stratum in the bank does not possess the qualities to be desired in the pavers or whatever is being manufactured. Such information enables one to tackle more intelligently the problem of working in the objectional part of the shale or clay supply in such a way that it will do no harm to the quality, or, if necessary, of eliminating the objectionable part entirely.

The weight of a cubic yard of bank may be closely estimated by multiplying the weight of a cubic yard of water (1684.8 pounds) by the average specific gravity of the bank. If the weight of a cubic yard of bank is known, blast holes may be located with greater assurance of securing good results. Good blasting generally brings down four tons of shale for each pound of dynamite. Of course, this amount varies in different shale banks according to the blasting qualities of the shale. If the weight per cubic yard of the material to be blasted, the number of pounds of explosive per lineal foot of hole, and the number of tons of shale that can ordinarily be blown down with a pound of explosive are known, the location of blast holes becomes more or less a mathematical problem. Money may be saved by securing this information and occasionally making the calculation to check up the blasting in the shale pit.

HOW TO ESTIMATE NUMBER OF BRICK

The weight of a cubic yard of shale divided by the average weight of a dry brick from the dryer will give the number

of brick per bank yard. This enables one to estimate the number of brick in the shale bank or in the shale storage. We have all seen companies who would probably have spent their money differently, if they had accurately estimated the number of brick in the shale or clay supply.

The weight of a cubic foot of loose quarried shale is essential in haulage calculations and storage construction. When you buy a dinky locomotive, you ought to know the per cent. grade in the track, the number of cars to be hauled, the weight of the car and the weight of the load to be put on the car. For brick yard tracks, it is safe to figure 40 pounds draw bar pull for each ton to be hauled on the level, with an additional 20 pounds per ton for each per cent. of grade.

One way to estimate the weight of the loose shale is to guess at it, or ask somebody, or look it up in a hand book. A better way is to calculate the weight by specific gravity. Weigh a tub, or some similar water-tight receptacle, on a platform scale. Fill the tub even full of shale and weigh it, taking care to have the same proportion of coarse and fine shale that goes into the car or storage, and as nearly as possible, the same number of voids. Subtract the weight of the tub from the weight of the tub and the shale, and the result will be the weight of the shale. Now empty the tub, and fill it with water. Weigh the tub full of water. Subtract the weight of the tub from the weight of the tub full of water, and the result will be the weight of the water. Divide the weight of the water by the weight of one cubic foot of water (62.4 pounds). The result will be the number of cubic feet in the tub. Now divide the weight of the tub full of shale by the number of cubic feet in the tub, and the result will be the weight per cubic foot of loose quarried shale. This method applies equally well to ground clay.

HOW TO DETERMINE SPECIFIC GRAVITY OF CLAY

The specific gravity of a lump of clay may be easily determined with a spring balance. Suspend the lump from the scale hook and weigh it in air. Then weigh it in water. Subtract the weight of the lump in water from the weight of the lump in air, and the result will be the weight of the water displaced by the lump. Divide the weight of the water

displaced by the lump by 62.4 and the result will be the fraction of a cubic foot of bank measure the lump occupies. Now divide the weight of the lump in air by the fraction of a cubic foot of bank measure which the lump occupies, and the result will be the weight per cubic foot of bank measure of the particular material in this lump. These are old methods that most of us have learned in our days of high school science.

On most brick yards, it appears that specific gravity is so old a topic, that it has been entirely forgotten. It pays sometimes to revive in our minds the old, simple fundamentals.

A card in a reference index which has on it the weight of a cubic yard of the bank; the weight per cubic yard of quarried shale, loosely packed as in the car; the weight of a cubic yard of quarried shale well packed as in the shale bed; the weight of a cubic foot of ground shale loosely packed as in the feeder bin; and the weight of a cubic foot of ground shale well packed as in the storage bin will be a comfort and satisfaction to the man who is operating a brick yard and who has improvements to make.

Another card with the specific gravity of various parts of the bank, with a note as to how each acts when burned, may be of assistance in the everlasting fight for quality.

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How to Use a Pulley of Too Large Diameter

It may be desired at some time to use a pulley which is only slightly greater in diameter than the shaft on which it is to be mounted. Usually this problem is solved by forging a steel sleeve which must be bored, turned, and fastened to the shaft with a set screw. A far simpler and equally efficient way is reported as follows: Paint the shaft with a good leather cement and then wrap it with a strip of burlap until the desired diameter is reached, glueing the surface of the burlap as it is rolled on so that each lap is cemented to the preceding one. In effecting this arrangement care must be taken to wrap the burlap in the direction of rotation on a driven shaft, and in the opposite direction on a driving shaft.

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Removing Grease Without Gasoline

Oftentimes when small machine parts around the plant become covered with oil and grease, it is desirous to clean them. This is usually accomplished by dipping the parts in gasoline. However, other cleansing mediums which would be cheaper and at the same time of less danger to fire, may be used.

One way in which oil and grease can be removed is thru the use of hot soda ash or other cleaning solutions, as a substitute for gasoline. The soda ash is made up in a solution and the pieces to be cleaned immersed. It has been found that steam dries them nicely, if blown directly into the parts after they leave the cleaning solution. Soda ash may be obtained from most any drug store.

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The Status of Magnesite Mines

Previous to the war magnesite was hardly mentioned in market reports of ores dug from western mines of the United States. Austria in greater part and Greece in smaller amounts were supplying the United States with this practically indispensable factor in steel making to the extent of 350,000 tons a year.

At the close of hostilities, 626,000 tons of American magnesite have been delivered from thirty-three mines in California and Washington to furnaces of industry in the East

that have been cut off from their European supply. This output of American magnesite dropped from 317,000 tons in 1917 to less than 160,000 last year. This year there has been scarcely any sale for it.

There are two kinds of this ore found on the western coast, one found mostly in California. This magnesite is a pure, white amorphous type used mostly in making chemicals and plastic or composition flooring, and without treatment is similar to the product of Greece. The Washington or crystalline magnesite is of a brown color similar to the Austrian ore and when a little iron is added, a simple and inexpensive process, it is ready to be made into refractory brick for open hearth steel furnaces, and those of the smelters of copper and lead using coal, oil or electricity. Four large refractory companies take ninety per cent. of the magnesite in the United States. The demand, because of its comparatively high cost, is restricted in construction uses, which also limits its employment in the making of paper pulp and epsom salts.

Deposits of magnesite ore have been worked in Mexico and Venezuela, and a low grade obtained from Canada. It was on Austria and Greece that United States refractory products manufacturers depended for supply. When the war cut off the output from those countries, a few mines in California were producing 10,000 tons a year. Not a pound was coming from Washington. The great need for war purposes led to the discovery in Washington of practically an inexhaustible amount of ore lying almost on top of the ground, where it could be taken from open cuts. In California, where more deposits were quickly found, it has to be mined in the usual underground fashion.

These discoveries developed not a little natural iron-bearing magnesite, that is, ferro-magnesite, which has for the most part gone into refractory products and has been found satisfactory. Considerable experimental work had to be done by these California pioneers to attain these desirable results, and their work has been pronounced of permanent value.

A recent publication of the Bureau of Mines states:

"The reserves of magnesite in California are considerable, certainly enough to last many years even at war time demands." One authority at the Bureau believes that California and Washington have enough of the mineral to supply the United States for twenty-five, if not for fifty, years.

With the encouragement of an alarmed government, which incidentally thru its control of railroad transportation profited by more than \$10,000,000 thru its freight charges and by the investment of four or five millions of private capital, thirty mines were being worked in California and three in Washington when the war ended. Then came an instant change. Some of the owners of American refractories plants in which the brick were made were owners of or had been financing the magnesite mines of Greece and Austria. They have been able to lay down their own foreign product in the Atlantic ports duty free for \$16.25 a ton. This is but little more than the cost of freight alone on the ore obtained in the West. The price of the material today in Chewelah, Washington, is \$32.50 and the freight to Philadelphia is \$16.07 a ton. With a cost of \$48.57 a ton delivered for the American product against a former cost of \$16.07 for the European ore, the refractory operators, whether or not interested in the foreign mines, naturally held up orders pending revival of shipments from abroad.

The suspension of orders caused a suspension of work at the American mines. Practically all of them have been shut down. The mine owners are asking Congress for a tariff duty of three-quarters of a cent a pound on commercial magnesite ore and twenty-five per cent. ad valorem duty on magnesite brick to protect their new American industry, and their large investment.

IN *the* WAKE *of the* NEWS

Being a Brief Mention of a Host of Interesting Happenings in the Varied Fields of the Clayworking Industry

Personal

David Lehman, assistant manager of the Ironclay Brick Co., of Columbus, Ohio, took his family to Rye Beach, Lake Erie, recently by automobile.

Joseph Forcier, age 59, and for a number of years connected with the East Bridgewater Brick Co., died at his home in Bridgewater, Conn., on July 25.

H. F. White, sales manager of the brick department of the Hocking Valley Products Co., of Columbus, inspected the plant at Greendale, Ohio, early in August.

Lawson Moores, of the Moores-Coney Co., Cincinnati, Ohio, retailers, was a business visitor in Columbus late in July. He came to investigate conditions in the face brick trade.

Emmet Howard, head of the Columbus (Ohio) Brick Co., was called to Cleveland on business early in August. Mr. Howard reports a good demand for face brick, with conditions generally satisfactory.

F. G. Atkinson, who for several years has been superintendent of the Suburban Brick Co., at Bellaire, Ohio, resigned to become superintendent of the Windber Clay Manufacturing Co., at Windber, near Johnstown, Pa., effective August 1.

J. M. Adams, secretary and general manager of the Ironclay Brick Co., of Columbus, Ohio, attended a meeting at Niagara Falls in which he took a prominent part. Following the meeting he took a short vacation trip in Harrison County, Ohio.

At a recent meeting, J. W. Winters, New Philadelphia, Ohio, was elected a new member of the board of directors of the Belden Brick Co., which has plants at Port Washington and Uhrichsville, Ohio. George Arnold, city engineer, was re-elected a director.

Charles Frank, of the Hocking Valley Brick Co., Columbus, Ohio, recently returned from a business trip in Huntington, where there was a street paving contract awarded. "Bob" Morrow, of the same company, recently returned from a business trip thru Michigan.

William P. West, who has been a salesman with the Ironclay Brick Co., Columbus, Ohio, for the past six years, has taken the position of sales manager with the brick department of the Columbus Contractors' Supply Co., with offices in the Columbus Savings & Trust Building.

William Schlake, president of the Common Brick Manufacturers' Association of America, also president of the Illinois Brick Co., Chicago, left for a trip to Europe on August 1. He was appointed one of a commission of three to visit the war torn countries in the interest of certain organized American charities. While over there, Mr. Schlake proposes to do the association some service by taking photographs of brick buildings thruout the various fields of battle he visits and bring them back for publicity use.

A great shock to his many friends and acquaintances was the sudden death of George A. Dodge, manager of the Building Material Exhibit, San Francisco, Calif. On the last day

of July, Mr. Dodge was riding in an automobile near Stockton, Calif., with Robert Oliphant, manager of the Ralston Iron Works, when the car was struck by a Southern Pacific train, instantly killing Mr. Dodge and injury Mr. Oliphant so severely that he may die. Mr. Dodge was a local architect of note, and for the past few years he has been in charge of the exhibit of which William L. Hughson is president. He is survived by his widow, who resides in Berkeley, Calif.

Alabama

According to figures given out by the Louisville (Ky.) Board of Trade, Birmingham, Ala., ranks second in the number of building permits issued, and twelfth in the value of buildings contemplated among the cities of thirteen southern states for the first six months of this year. Birmingham's record for the first six months of 1919 is 1,897 permits with a value of \$1,141,000.

Arkansas

B. J. Chamblin, who was a captain of Coast Artillery during the world war, and F. D. Bates, who when the armistice was signed was about to complete his course in an officers' training camp, both of Dallas, Tex., will organize and operate the Southern Building Products Co., at Little Rock, Ark., which concern will manufacture interlocking tile and handle face brick and other clay products.

California

An ornamental front of white glazed brick will be used for a \$30,000 brick garage, to be erected at Van Nuys, Calif., by G. A. Huffaker.

A one-story brick garage is to be erected in Broadway near Moss avenue, Oakland, Calif., by William Greuner, at a cost of \$13,000.

A low bid of \$5,889 has been given by C. L. Passmore, of Los Angeles, Calif., for the tile roofing contract for the Merced High School group.

Architect H. H. Whitney, of Los Angeles, is preparing plans for a one-story brick theater and store building for Oxnard, Calif., at a cost of \$35,000.

Plans are now in readiness for a one-story brick garage for Kerman, Calif. They were drawn by Swartz & Swartz, of Fresno, Calif. Contracts are to be let shortly.

H. P. Nelson has been awarded the contract for the erection of a one-story brick garage to be located in Market near Eighth street, Oakland, Calif. The figures are \$10,900.

Architect E. J. Kump, of Fresno, Calif., is preparing plans and arranging figures on a one-story brick, tile and stucco school building for Mendota, Calif. The estimated cost of the structure is \$25,000.

The firm of Rosenberg & Casper have received a building permit for the erection of a six-story brick building for the northwest corner of Geary and Taylor Streets, San Francisco, Calif. The estimated cost of the structure is \$150,000.

Architect Clay N. Burrell, of Oakland, Calif., is now taking sub-figures for the construction work on a two-story brick

commercial garage building to be located in Broadway near Piedmont avenue. The cost of the building is estimated at \$25,000.

At a price of \$203,394, the W. E. Kier Construction Co., of San Diego, Calif., has been awarded the contract for the construction of a hollow tile administration building and walks and roads at North Island Naval Station for the U. S. government.

Plans for a one-story brick grammar school building for the Yreka school district, Siskiyou County, have been completed by Henry C. Smith, of San Francisco. The building is to contain eight rooms and an auditorium and will represent an expenditure of \$40,400.

Howard Frost, president of the Los Angeles (Calif.) Pressed Brick Co., reports that business is increasing in that city at a rapid rate. It is his opinion that greater expansion will be necessary shortly in order to meet the growing demand for Southern California products.

Plans are now complete and Architect Chester Cole, of Chico, Calif., is taking figures on the construction work of a one-story school building for the Knight's school district at Grafton, Yolo County, Calif. The structure is to be of hollow tile and will cost in the neighborhood of \$12,000.

Plans are being prepared by Architect J. A. Magee for a five-story brick apartment house of two and three rooms, to be erected in Post Street at an estimated cost of \$35,000. Another apartment building for the Nob Hill district will be designed by Mr. Magee, to be constructed of brick. The owners are planning to spend about \$100,000 for this building.

There is some talk just now of an increase in price of clay products, to go into effect during the latter part of August or the first of September. The amount of the proposed raise has not been made public, but the general opinion of the trade is that it will be raised to meet the prevailing list in other cities. It is said that San Francisco prices are now less than those in other sections of the country.

A modern \$45,000 building is to be erected in Tracy, Calif., according to plans drawn by Architect H. W. Weeks. It is to be largely constructed of brick. Architect Weeks recently awarded to J. F. Knapp, of Turlock, Calif., the contract for the building of the new T. & D. theater in Turlock. Ornamental terra cotta is to be used for the front of the structure, which will cost about \$100,000 complete.

The McNear Pressed Brick Co., of San Francisco, Cal., is shipping large orders to the Hawaiian Islands, where general conditions are said to have greatly improved during the past month or two. Numerous factories are being erected there besides additions to the plants already in operation, thus creating a strong demand for building material of this character. This same firm is also furnishing quantities of brick to the new sugar refinery at Crockett, Cal., as well as various construction contracts under way in Sonoma County. The local office states that San Francisco deliveries, too, have increased to a marked extent.

Colorado

After a close-down of six months, the Jewett Fire Brick Co., of Canon City, Colo., resumed operations on July 11, and is now manufacturing a high grade brick with a splendid outlook for a big brick production during the coming months. At the present time the Jewett company is supplying the Standard Oil Co.'s smelter at Florence with brick for its new additions and is also shipping daily to Wyoming.

Grand Junction, Colo., is to have a new brick plant. A number of leading and professional men of the city have organized the Grand Junction Pressed brick Co. They expect to begin the manufacture of building brick very soon. The company will be incorporated for \$50,000. Those interested in

the concern are C. C. Lamb, W. J. Moyer, William Weiser, A. C. Parsons, A. P. Wadsworth, J. M. Silcox, H. B. Jones, William Buthorn, M. E. Loeffler, T. M. Edwards and C. E. Cherrington. S. J. Currier, Sr., has been elected manager of the concern.

As noted in the July 15 issue of *Brick and Clay Record*, fire of unknown origin did considerable damage at the plant of the Van Briggles Tile & Pottery Co., Colorado Springs, Colo., on June 25. The accompanying view shows a portion of the



Portion of the Van Briggles Tile & Pottery Co., Factory Where the Flames Were Hottest. The Clay Goods in the Building Construction Withstood the Fire Very Well.

plant where the fire was the hottest. The windows in front were veritable chimneys, and altho the flames rushed thru them the terra cotta and tile is absolutely intact, while the wood, steel and concrete in the building is rendered unfit for further use.

Connecticut

The property of the Milldale (Conn.) Brick Co., near Southington, Conn., has been sold to John Johnquest, of Waterbury. Of recent years there has been little activity at the Milldale establishment, but the recent increased demand for brick has made all such plants valuable assets. It is understood that the new owner will put the buildings in good order immediately.

Delaware

The Clarion Coal & Clay Co., Wilmington, Del., has been incorporated with a capital of \$300,000, to operate clay lands and other properties. E. V. Darlington, M. Butler and L. M. Jennings, Wilmington, are the incorporators.

The demand for common brick and other burned clay products at Wilmington is on the increase, if the past few weeks are any indication. There is little change in existing price levels, nor is there likely to be for some time to come. Figures seem to have reached their logical point, and local builders are not looking for any recession. Common brick, good stock, is selling for about \$20 per thousand, delivered on the job. Face brick, now operating under better call, ranges in price from \$33 to \$45 per thousand. Kittaning varieties, smooth and rough, are selling at the latter figure. Fire brick is quoted at about \$70 per thousand at the present time.

The past fortnight has shown considerable improvement in building work at Wilmington, Del., and vicinity. Plans for a number of important buildings have been filed and estimates asked on quite a volume of new work. Brick is in prominent demand for this construction, and an accordant increase in call has been evidenced. The Delmarvia Leather Co. will build a new five-story, brick addition to its plant at Fourth and Orange Streets, 30 by 100 feet, to cost about \$25,000; the Tanners' Product Co. has awarded a contract for the erection of a one-story plant addition to cost a like

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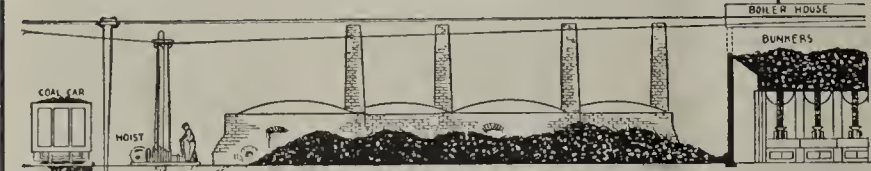
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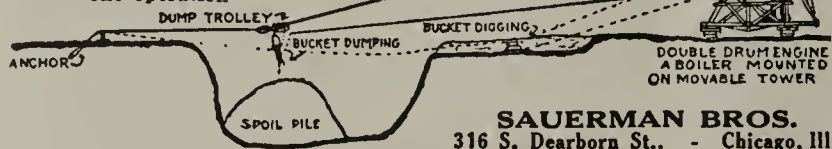
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Brick and Clay Record

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amount; the Bond Mfg. Co., Fifth and Monroe Streets, will construct a one-story brick extension for increased capacity; while the E. I. du Pont de Nemours Co., will build a one-story addition to its property at Tenth and Market Streets, to cost about \$35,000. The construction of apartments and homes is also assuming an encouraging aspect thruout the city, and plans for a number of structures of this character are now under way.

District of Columbia

John H. Miller, of the Washington (D. C.) Brick & Terra Cotta, Co., has petitioned the District Commissioners for permission to postpone the closing of the old brick plant on the James Creek canal, claiming that the brick famine in Washington can be abated by the use of this plant. District residents living near the brick plant have asked that the buildings as well as the canal be closed. Commissioner Brownlow told the representatives of the brick company that inasmuch as the District government is not empowered to grant a lease on public ground on which the plant stands for more than a year the request of the company for a new lease covering a number of years could not be granted. The lease on the brick plant ran out in October, 1917, and it is said that considerable repairing will be necessary before the machinery can produce the maximum output of seventy thousand brick a day.

Florida

Brick and tile will be the principal products that will be made in a new plant that is to be established at Miami, Fla., by R. B. Ganthier, R. E. Hall and Fred W. Pine.

Illinois

George J. Walter, Chatsworth, Ill., reports that business conditions are very good in his territory. Mr. Walter is contemplating installing two new boilers at his plant.

Construction of a little less than fifty miles of hard roads, involving an expenditure of more than \$1,000,000, is contemplated in contracts awarded by the Illinois state highway division on July 24. Four and a half miles of hard road are to be built east and west from Rochelle in Lee County, at a cost of \$99,559; six miles near Ashton, in both Lee and Ogle Counties, to cost \$135,000; eight miles in Madison County, between Edwardsville and Gillespie, \$216,730, and five miles in Cook County, between Chicago and Summit, \$134,658. Other construction work embraced in the contracts awarded is in Putnam, Bureau, and Fayette Counties.

Iowa

Johnson Brothers, at the clay works plant, just outside of Fort Dodge, Iowa, are using two Thew electric steam shovels in a gravel pit over their shale pit.

The rebuilding of the National Clay Works plant at Mason City, Iowa, which was destroyed last fall by fire is about completed and operations will be resumed shortly.

The plant of the De Soto (Iowa) Brick & Tile Co., was entirely destroyed by fire on the night of July 22. The plant was recently purchased by Herdiloka. No announcement has been made as yet as to what the future plans for the plant are.

The Redfield (Iowa) Brick & Tile Works is making some good improvements on the plant. The yard is being paved preparatory to the use of electric trucks for handling the burned ware. Extensive improvements are

also being made on the dryer, whereby the output of the plant will be increased twenty-five per cent.

A comprehensive building program involving the expenditure of at least \$1,000,000 has been undertaken at Crowley, Iowa. It will consist not only of the construction of new residences but also the erection of new buildings in the business district.

General building conditions in the Iowa territory continue active and there is every prospect of an unusually heavy fall business. This is particularly noteworthy in the case of drain tile. Iowa producers say that the demand for drainage is phenomenal at the present time. The labor shortage continues and production will be considerably curtailed in some localities.

The new tonnage basis plan of support for the Permanent Buildings Society is meeting a ready response from most of the clay producers of Iowa. As a recent bulletin of the society states: "There is an appeal in it that few seem to resist. It is bringing out an understanding of their own position in every man's part with regard to doing his share to help the industry. The plan is equitable and therein lies its strength."

Kansas

Emporia, Kan., will spend \$50,000 for a new sanitary sewer system this fall. The growth of the city in the past few years has made the present system inadequate. The work includes the installation of three main drainage lines of ten-inch pipe. The contract has not been awarded.

Kentucky

The Southern Brick & Tile Co., Louisville, Ky., is making up tile stock for winter business as usual and keeping fairly busy in its brick department.

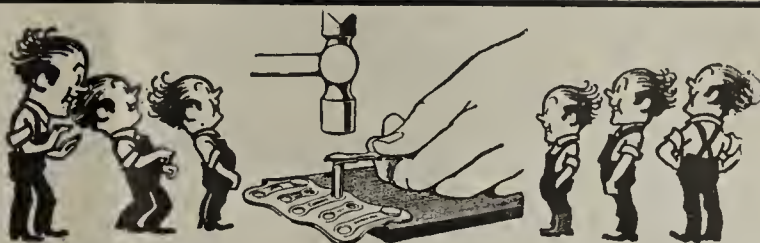
At the plant of the Progress Pressed Brick Co., Louisville, Ky., operations are going along on a very fair basis, as the company has a number of very good contracts on hand and is loading up all available kilns.

A. P. McDonald, salesmanager for the P. Bannon Pipe Co., Louisville, Ky., reports a fair movement of sewer pipe, but hollow tile, building brick, and other lines are not showing any great activity, as there has been a slump in new business.

Brick prices are generally firm, and well maintained with the Eastern Kentucky trade. Common brick is selling at \$16 per thousand delivered, and \$14 on board cars, while face brick is quoted at \$30 delivered and \$27 on cars, hollow brick being quoted at the same prices as solid.

The Coral Ridge Clay Products Co., Louisville, Ky., has been operating its plant full time for the past two months, manufacturing brick and hollow tile. Manager Jim Howington reports that orders are fair, but not as active as in early July and June. Part of the present run is for stock. Mr. Howington stated that in his opinion the high price of lumber was having a lot to do with the present dullness, but labor and general building material prices have been at fault.

Louisville is entirely out of the paving block manufacturing business, not a single plant in Louisville making that type of brick today, whereas Louisville was a comparatively large producer a few years ago. The Bannon block in the old days was well known, and many an "alley apple," had a part of the Bannon name engraved somewhere on its surface. Such supplies of paving brick as are used in the district come chiefly from Portsmouth, Ohio, and Brazil, Ind.



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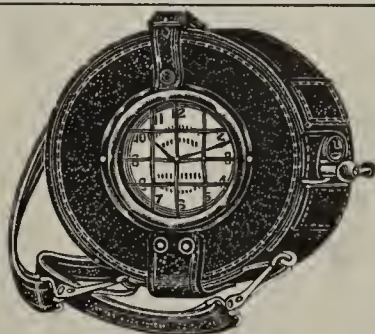
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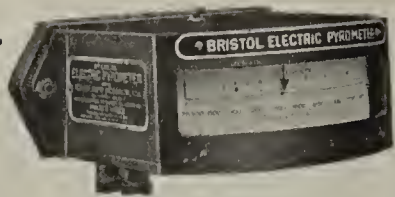
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A28

Brick manufacturers of Louisville, Ky., have been considerably worried for the past several days over the increasing shortage and difficulty in securing cars. Box cars, flat cars, gondolas and in fact all types of cars are scarce. There is a heavy movement of lumber, wheat and general products at this time, and under the curtailment plan of the U. S. Railroad Administration thousands of shopmen are idle and cars are in bad repair and the condition is growing worse, as the railroads can't hope to keep up with repair work and new work with short shop forces. The coal men have carried the matter to Washington, but no relief has been obtained.

Cooperation such as has never before been known in the brick trade is being shown on the part of the Eastern Kentucky brick manufacturers. The brick men of Louisville, Lexington, Maysville and Barbourville, consisting of eight plants, are now operating a division bureau, which is in charge of Harry Cramer, of Lexington, Ky. Each company makes a daily report of quotations made and orders received, giving correct amounts and names of the persons to whom sales are made. Thru this method the members are securing an absolute check on prices at which sales are being made, and are no longer played one against the other by the contractors and builders. Mr. Cramer gets out a daily bulletin showing what the various companies are doing, as each man is laying his cards face up on the table, and giving out inside information on his business. The contractor who tells the brick man that another plant has offered him brick at \$2 a thousand less hasn't a foot to stand upon when the brick man has the actual quotations on that particular lot. It also keeps the trade much better posted on general conditions, demand, supply, etc. Before the organization of the Kentucky Clay Products Association no one would have thought that it would ever be possible for the manufacturers to cooperate in such a way.

Maryland

A new building of the Queen City Brick & Tile Co., Cumberland, Md., recently constructed to form the main manufacturing works, was partially damaged by fire on July 29. The structure, of brick and frame type, is located near Evitts Creek, and cost about \$40,000. It is understood that the destroyed part will be immediately rebuilt.

An interesting project is being developed at Baltimore for the establishment of a new waterfront terminal, consisting of a series of warehouse buildings with docks and other structures. The initial work is estimated to cost about \$5,000,000, to include the erection of one pier, two warehouses, bulkhead, electric power plant, etc. The warehouses will cost \$1,824,000, and the power plant, \$175,000. Handling and conveying machinery of all kinds will be installed, with cost of this feature estimated at over \$100,000. The city and local capitalists are interested in the project.

Construction work at Baltimore reached a total of \$6,693,785 during the month of July, the best that month for the past ten years. with the nearest approach, July, 1917, when an aggregate valuation of \$5,000,000 was recorded. To show the trend of construction, the July building covered ninety permits for two-story dwellings, with cost estimated at \$3,446,300; twenty-eight permits for three-story buildings, totaling \$810,300; and eight permits for new industrial buildings, aggregating \$362,100. These figures indicate what a strong hold the construction of new homes has taken in the local field.

Common brick, face brick, building tile and other burned clay products are in good demand in the Baltimore section.

Commodities of this nature form the basis of the bulk of local construction, and act as sort of a barometer on trade conditions in building circles. Quotations show no change, with common brick selling at \$14 and \$15 a thousand. Red sand face brick is selling for about \$23 per thousand, delivered on the job in carload lots. Other face brick varies in cost from \$36 upwards, with good grade of desirable material to be secured at about \$40 and \$43. Fire brick is hovering around the \$70 mark, with fairly good call at the present time.

There is certainly no lag in construction work at Baltimore and vicinity at the present time. Each week shows an increase in building operations and the outlook is decidedly encouraging. Housing work forms a large feature of the developments, and numerous homes in all parts of the city are now in course of erection. This work is taking the shape of group construction, aggregating anywhere from two to two hundred residences, and more; 194 two-story, brick residences will be built by Morris E. Green, 3200 Frederick Avenue, at a cost of about \$3,000 each; 165 two-family homes will be constructed by William Sebold in the Tenn Hills section; ground has been broken for twenty-nine new two-story residences on Wilson Avenue, to cost \$130,000, this being a project of the Electric Park Development Co. In connection with industrial work, the Armour Fertilizer Co., Chicago, is understood to be considering plans for the erection of a new brick plant in the Baltimore district, at Allen Street, and the Key Highway, to cost about \$500,000.

Massachusetts

City officials of Chicopee, Mass., have practically decided upon the use of vitrified brick for paving School, Front and Montgomery streets, and the contract will be let shortly.

Construction projects now underway in Gardner, Mass., forecast a good demand for building materials and represent the nearest approach to an actual boom that the town has known for many years.

Conditions in the brick industry in Boston, Mass., and vicinity are improving each week and dealers report a somewhat better inquiry, altho they would be glad to handle more business. The New England Brick Co. recently contracted to furnish brick for two school houses in Waltham and some other similar contracts have been placed. The price continues firm at \$18 delivered on the job, but there is a feeling that it may advance.

Mississippi

The mayor of Pass Christian, Miss., Frank Sutter, is anxious to secure the establishment of a brick and tile manufacturing plant at that point. Mr. Sutter states that there is a large deposit of clay along the banks of the Wolf River, north of the town, from which the products of the plant could be barged to cities along the Gulf Coast.

Missouri

A fire recently destroyed \$2,500 in stock and badly damaged the two story building of E. J. Rotty & Co., St. Louis, Mo. The loss was covered by insurance. The origin of the fire is unknown and all possible theories of accidental origin were discredited by Mr. Rotty. He has been in the sewer pipe business in St. Louis for thirty years. The contents of the building were destroyed by fire in 1910, and the structure was so badly damaged in the latter fire that it probably will have to be torn down.

Plans are being drawn for one hundred brick bungalows,

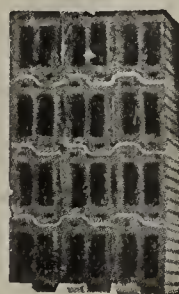
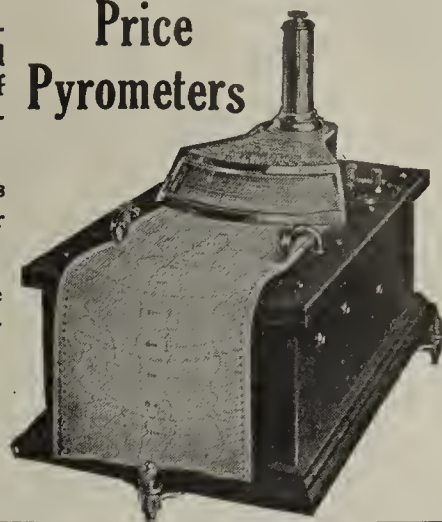
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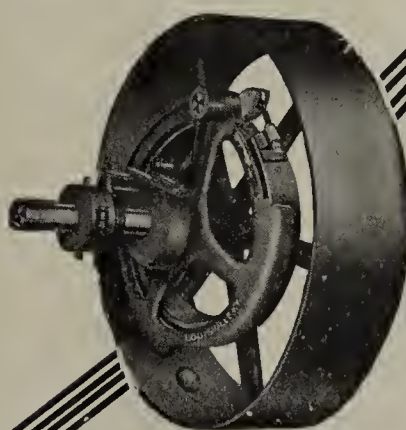
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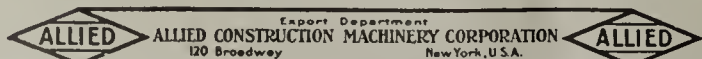
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Branch Sales Offices in Principal Cities



which will be erected at Kenwood Springs, about eight miles northwest of St. Louis, Mo., by interests represented by A. A. Fisher, who has offices in the Wainwright Building. The structures will be one-story and each will cost \$5,000. Every dwelling will be surrounded by spacious grounds. It is understood that the chief financial interest is Herman Luyties, St. Louis building promoter, who at one time owned all of Kenwood Springs. Recently, thru a big advertising campaign, he sold 35 bungalows of this same type which he had erected. The buildings were erected at a cost of \$150,000.

Which may, in large measure, account for the recent increase in the sale of brick in St. Louis for the past month or more is the fact that sixteen miles of hard paved street are now in the course of construction. This announcement was made by W. W. Horner, engineer for the Department of Streets and Sewers, after an official tabulation. This is the largest amount of work of that kind in the history of St. Louis, and will cost property owners in the benefited districts more than \$1,500,000. The street department is trying to give St. Louis the reputation of having the best streets in the country. It now is second to none.

Building permits issued in St. Louis, Mo., during the month of July are almost double the number issued in July, 1918, according to figures compiled by Building Commissioner McKelvey. In July last year 495 permits, for work aggregating \$1,159,535, were issued and during the past month 887 permits, for an expenditure of \$3,302,537 were allowed. Of the latter sum \$2,883,397 is being spent for new buildings and the remainder for alterations. The greatest expenditure for new buildings is \$1,753,450 for manufacturing plants and workshops, the majority of which are being constructed of brick. One hundred and nine dwellings, costing less than \$20,000 each, are being built of brick.

The Board of Aldermen at a special meeting, Saturday, August 2, passed a set of amendments to the St. Louis zoning ordinance which will permit the erection of proposed buildings, estimated to have an aggregate value of \$5,500,000. This construction work was held up by the inability of Director of Public Safety McKelvey to issue permits under the zoning laws as existed. The Aldermanic Legislation Committee refused to make a report favoring a proposed amendment which would have delegated to the Board of Public Service discretionary powers in the matter of determining the granting of building permits which had been refused by the building commissioner. The City Plan Commission, where the zoning ordinances originated, was bitterly criticised by St. Louis builders and manufacturers. The ordinances purported to control yard space, area, height and type of buildings in certain districts. Investors contemplating expensive building on valuable ground found themselves facing the alternative of providing "yard space," regulating the height and area of their buildings to the law for the "district" or abandoning their plans altogether. Their inclination to the latter caused speedy action on the part of the Board of Aldermen.

Montana

W. E. Dowlin, president of the Dowlin Brick Co., Billings, Mont., expects to resume the manufacture of brick within two weeks. A dynamite charge, planted in the hopper of a brick auger machine on July 13 demolished the main machinery of the plant. Mr. Dowlin states he holds no theory to account for the explosion.

New Jersey

The William Graham Co., Fieldsboro, N. J., is operating its plant in the Bordentown section at good capacity for the production of common brick as well as other varieties of

burned clay products. A good grade of face brick, both smooth and rough selections, is turned out at the plant.

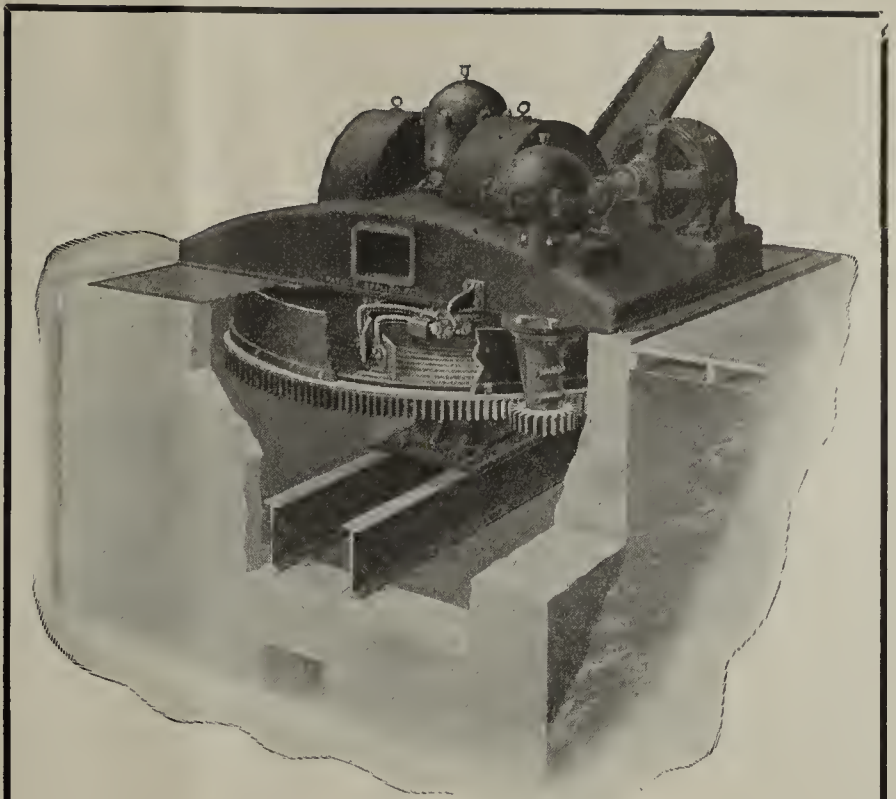
The Reliable Tile Co., Orange, N. J., has filed notice of organization to operate at Main and Stone Streets. Walter Gray, 629 Ridgewood Avenue, South Orange, heads the company.

The various brick yards in the Hackensack district continue to maintain operations at a good status, with labor the one severe handicap in the movement for any increased production. The call for material at the yards of the Hackensack Brick Co., Henry Gardner and I. E. Gardner shows no let-up, and there is every evidence of this demand growing as the fall season comes. Stocks are maturing but not to that extent that will allow for a response to any marked call. There is every reason to believe that the different plants will reach regular annual production figures during the present season, and it is possible that with current demand maintaining and increasing that this may be exceeded. Brick is now selling for \$16 per thousand at the yards in this district.

The school of Industrial Arts, Trenton, N. J., is arranging for the coming season, and among the courses of study of this successful institution, ceramic work stands high. The new school addition, described in a former issue of *Brick and Clay Record*, will be used during the new school year for the classes in ceramics, machine shop practice, woodworking and automobile engine instruction. The ceramic department will be fully equipped for all features of work, evening courses only being arranged in this branch of industry. The entire school during the past year had 1065 students and a greater number is anticipated during the forthcoming season. The courses of instruction are covered by moderate fees ranging from one to twenty dollars a year, with materials furnished at cost. Frank Forest Federick is director.

The trend of construction activities, and the demand for burned clay products in the Trenton section is well reflected in the activities of the Philips-Harper Co., a comparatively new organization specializing in products of this character. Hollow tile is being furnished by this company for 30 bungalows to be erected at Sea Isle City, and for 65 hollow tile houses at New Brunswick. The same material is being supplied in a considerable quantity to the Walker-Gordon Laboratory Co., Plainsboro, N. J., for the erection of a number of extensions at its works. Several hundred thousand brick will be sent to the plant of the National Radiator Co., Trenton, for the construction of an addition to its plant. This company has added another agency to its rapidly growing list of representations, this covering the well-known products of the Upper Kittanning Brick Co., East Brady, Clarion County, Pa., and of which H. O. Wittpenn is president and general manager. The Philips-Harper Co. will act as exclusive distributors for central and southern New Jersey, with products including tile and face brick, the latter of grays, buffs and iron spot, rough and smooth texture varieties.

Prices of common brick and other burned clay products show little or no change in the different parts of New Jersey. At Newark, good hard common brick is selling for \$19.50, delivered on the job; at Paterson and Passaic, the price has advanced from \$17 to \$19 per thousand; at Trenton, the figure is \$15, such price being made possible by local manufacturers; while in the southern section of the state, in and about Atlantic City, \$18 is being quoted. Face brick holds well at current levels, ranging from \$35 to \$50 per thousand in the different cities; stocks are being maintained at a good point, with demand increasing as the days go by for the different popular varieties of this material. The bulk



Dry Pan—Showing the Step Bearing Arrangement

Machines for

Crushing, Grinding, Pulverizing, Empounding, Tempering and Mixing, Elevating and Conveying All Kinds of Materials.
STEAM PRESSES FOR MAKING

Sewer Pipe, Drain Tile, Hollow Blocks, etc.

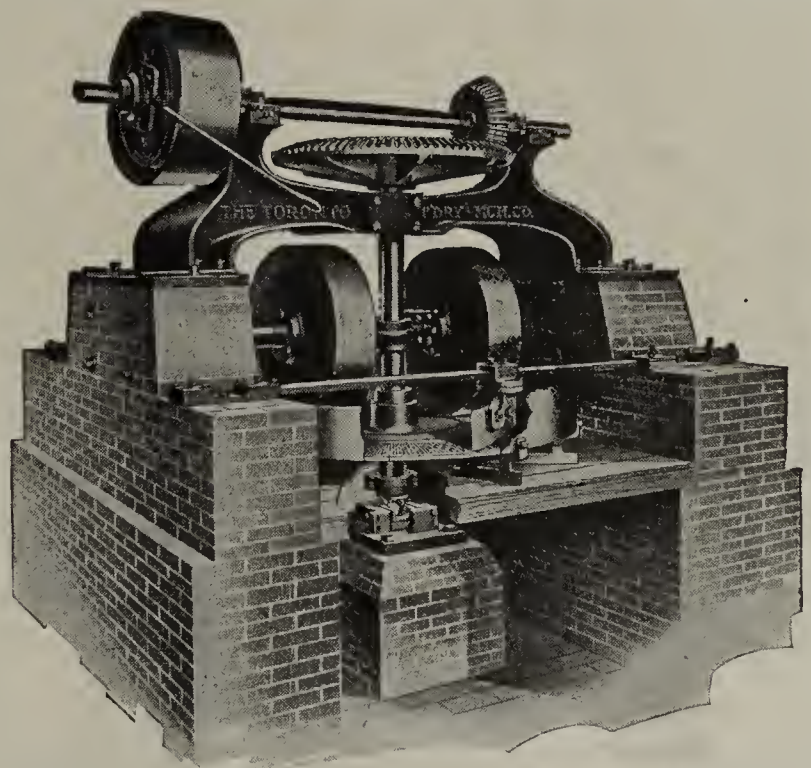
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For Grinding Wet, Semi-Dry and Dry materials. Made in sizes adopted by the best judges. We are in position to solve your grinding problems.

SINGLE, DUPLEX OR BATTERY INSTALLATIONS OF 8, 9 AND 10 FOOT PANS.

Write for Descriptive matter and prices on Pans Also Bulletins on Sewer Pipe and Tile Presses, Elevating and Conveying Machinery, Trucks, Barrows and other equipment for the clay products manufacturer.

TORONTO FOUNDRY & MACHINERY CO.

Toronto, Ohio

This Interesting Statement on Belt Slip Appeared on the "Iron Age" Front Cover, May 1, 1919

(Here is a reproduction of the first 4 lines.)

SLIPPING FOR 2,000 MILES

An ingenious analyst has discovered that an average 4 ft. belt slips or "creeps" over 2,000 miles in a working year. He says, very rightly, "How do the belts stand up to it?"

THE B. F. GOODRICH RUBBER COMPANY

The City of Goodrich, Akron, Ohio

In addition to the 2,000 miles creep, many belts, narrower and wider than 4', slip ANOTHER 2,000, 4,000 or even 6,000 miles, depending on the speed and the care the belt receives.

Assuming an effective pull of at least 50 lb. per in. in width, it is easy to figure that even where the belts run every minute of the year, the continuous loss is 1.45 hp.

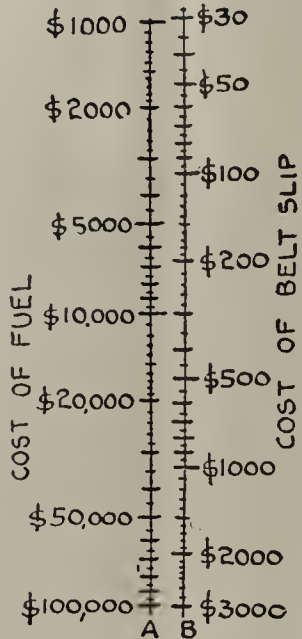
How much is a continuous hp. worth to you per year? In some cases it runs into the hundreds of dollars. Sometimes it is as low as \$30 or \$40. If it were only \$20 per year, is it not evident that a few cents' worth of Cling-Surface, which ELIMINATES ALL SLIP, would prove a good investment?

Shall we send 25 or 50 pounds of Cling-Surface on approval? If it doesn't SATISFY, it won't cost you a cent.

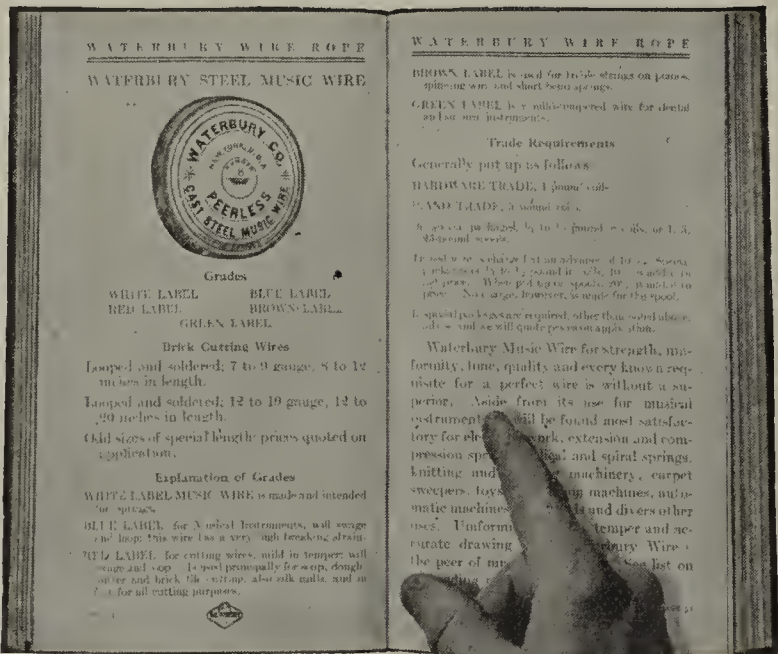
CLING-SURFACE COMPANY

1029 Niagara Street,

Buffalo, N. Y.



The above chart gives losses directly in dollars. It is based on 3% slip.



WATERBURY Steel Music Wire

drawn so fine that a ton of it would reach from New York to Honolulu—and from that size all the way up to wire only 14 feet to the pound. Waterbury Steel Music Wire, coarse or fine, has no superior in accurate drawing, temper and uniformity of stock. Waterbury workmanship and material—Waterbury QUALITY—makes Waterbury Music Spring Wire true to its brand: "Peerless," not only for musical purposes, but for all sorts of industrial uses; springs, cutting wire, instruments and electrical work.

WATERBURY COMPANY 63 PARK ROW, NEW YORK

Chicago San Francisco Dallas, Texas New Orleans
The Waterbury Handbook has the "dope" on steel wire—and on every kind of WIRE ROPE, too. There's much in its 220 pages that will be of service. Ask for a copy—it's free. 2335-W

of supply in this district comes from Pennsylvania, and reports from that section show that the face brick plants are busy. The call for fire brick seems on the increase, with prices holding firm at \$65 to \$70 for high grade material. It is almost needless to say that the demand for standard building materials in all parts of the state is good, and growing stronger.

The different ceramic plants in the Perth Amboy section of New Jersey report things as coming along in fine style. There is hardly a plant of this nature that hasn't felt the effects of the building revival, and orders are being received from all parts of the country. The terra cotta plants have resumed activities on a good scale, these including the Atlantic Terra Cotta Co., the Federal Terra Cotta Co., the South Amboy Terra Cotta Co. and the New Jersey Terra Cotta Co. This branch of the ceramic industry for some time past has viewed the outlook with a little apprehension, but the past two months have brought about an unlooked for call for material. Other factories in the Raritan River district report increasing volume of business in their respective lines, these including the National Fireproofing Co., the Perth Amboy Tile Works, the General Ceramics Co., and the Fords Porcelain Works. The clay miners in this vicinity are also getting busy, and the past weeks show a decided change in the trend of demand for the well-known plastic clays of this region.

As an idea of the continued popularity of brick and hollow tile for construction work in New Jersey, it is interesting to note some of the important projects in different parts of the state utilizing these materials. At Atlantic City a new hotel is to be erected of steel and hollow tile to cost about \$2,000,000; the structure will be known as the "Biltmore," and plans are now being prepared by Warren & Wetmore, architects, New York. At Newark, the Atlantic Smelting & Refining Co., Brooklyn, N. Y., has had plans drawn for the erection of a new plant of brick and steel on Avenue R, to cost about \$100,000; face brick, with limestone trim, will be used for the new plant of the Max Hertz Leather Co., on Oliver Street, in the same city, to cost about \$150,000. A new theatre will also be erected at Newark on Branford Place by Fabian, Zucker, Steiner & Co., to cost close to \$1,000,000; the structure will have an exterior finish of tapestry brick with glazed terra cotta trimmings, while the entrance will employ floor tile, and trimming of terra cotta and marble. At Trenton, the Thermoid Rubber Co. will build a brick addition to its plant for increased capacity.

As the principal industrial center of the state, Newark, N. J., is maintaining its record for leading in all lines of commercial activity, and building work at the present time is no exception to the rule. Each month is showing a gain in the volume of construction over the previous month, and a decidedly marked gain as compared with some few years past. July building in the city has broken a record covering the last seven years for this month; permits issued for building work aggregated \$1,541,562, as against \$635,623 for the corresponding period of 1918. It is the biggest July in local construction circles since 1912, when the total reached \$1,994,236. To show how each month is exceeding the previous month, the following figures for the last quarter are interesting: April, \$1,152,445; May, \$1,414,671; June, \$1,447,435; and July, as noted, \$1,541,562. The building records for this last month show that plans for new dwellings, the majority of brick construction, reached a total valuation of \$325,650, while new factory work aggregated \$353,000. The total of new buildings of all kinds of brick or

other fireproof material was close to one million dollars, or, to be exact, \$994,978.

Construction work of all kinds continues apace thruout New Jersey. As the weeks advance so does the volume of building projects, and there is scarcely a community in the state that hasn't felt the effects of the movement. The spirit of "Build Now" is prevalent everywhere—in northern, central and southern New Jersey; there is no particular limit as to character of structures, and ground is being broken for buildings of all kinds. A survey of the situation shows that dwellings and apartments are taking the lead owing to the unprecedented demand for homes of all kinds, closely followed by industrial structures, public buildings and miscellaneous work of general character. At Newark, Trenton, Camden, Paterson, Perth Amboy and the Jersey shore resorts, as well as in other parts of the state, the brick, clay and building material men are busy; the time when those in these lines were forced to spend idle days has given way to a demand for "being on the job" every minute. It is not a question of securing business but a question of handling the business that is coming along as a natural result of the inactivity in building work for the year past. This means an eye to stocks, prices, deliveries and other important features of business—and it fills the business day to overflowing. The anticipations of months past when things would take a turn has given way to the stern reality that this turn has come, and that prosperous times loom up ahead.

New York

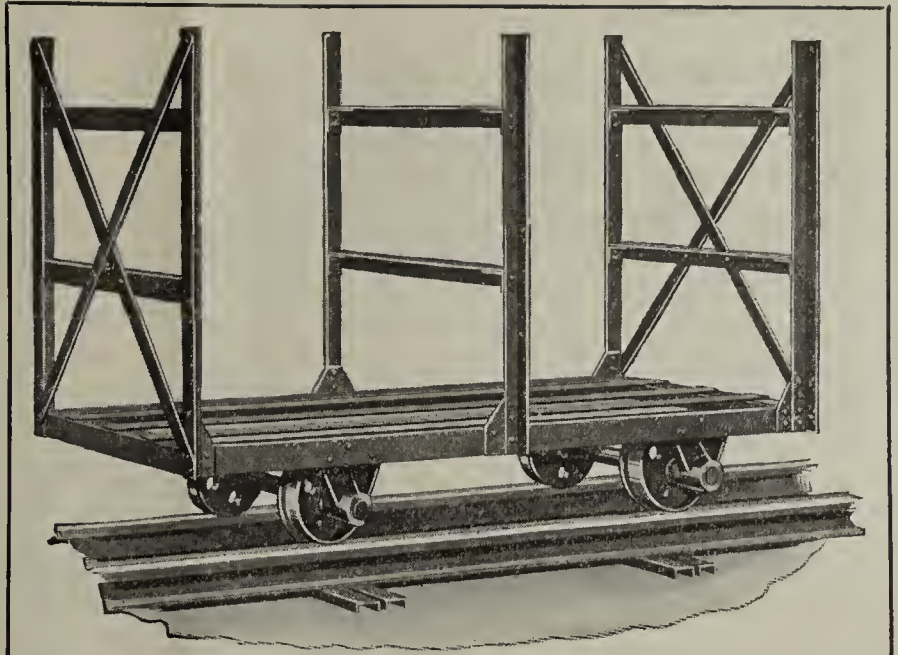
The Tecumseh Tile Co., 1416 Broadway, New York, has leased property at 153 East Thirty-eight Street for a new local establishment.

The Brooklyn Crozite Brick Corporation, New York, has been incorporated with a capital of \$275,000 to manufacture brick of various kinds. The incorporators are: Jesse H. Burr, F. M. Van Wagonen and M. P. Winne, 559 West One Hundred and Seventy-first Street.

The Ogdensburg (N. Y.) Brick & Sand Co. manufactured 125,000 brick at its yard so far this season, and has an equal number now ready for burning. The company has received several large orders, but expects to dispose of its entire output of 800,000 this season. A force of twenty men are now employed at the plant.

There is little change in the situation at the different Hudson River brick yards, excepting labor is apparently showing an improvement in the matter of supply. This is making possible operations at more normal status at various plants, and a number of yards are picking up in an encouraging way. With the continued call for material, every effort is being made towards increased manufacture, with hope of offsetting some of the losses and annoyances in the season past. It is anticipated that the sum total of production at the end of the present year will show round figures unanticipated at the inauguration of the season. It is said that the local manufacturers are making every effort to keep down the cost of production as well as that of handling, delivery and other phases of work.

Among the important construction projects at New York and neighboring boroughs may be noted the following: A new seventeen-story brick and limestone hotel at Madison Avenue and Fifty-eight Street, to be erected by the Allerton House Co.; a fourteen-story, brick and stone apartment house at 2333-39 Broadway, to be constructed by the Forty-eighth Street Co., at a cost of \$1,200,000; a brick and terra



Individual Service on Dryer Cars

Let us know your requirements
—let one of our engineers
come and help you to plan the
style of car that will best suit
your needs. We know how.

H. D. Conkey & Company
Mendota, Ill.

You can get a higher price for your brick
if you guarantee it will be

Scum-Proof

And you can do this with perfect safety by
using

R. H. Precipitated Carbonate of Barytes

It neutralizes the salt in your clay so that
it cannot appear on the surface of the brick
after it gets wet.

But don't accept a substitute—insist on R. H.
—the dependable brand.

Write for circular and prices.

The Roessler & Hasslacher Chemical Company

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We carry a complete line of high grade chemicals
for the clay industry



Light steel rails

We saved the day for the Clay and Coal Operators in War Times by furnishing BUCKEYE MINE RAILS, whenever and wherever needed, and while many other Steel Mills were running exclusively on other material, you could not have operated without us at that time.

Now, in Times of Peace, we ask that you do not forget us, as we can, and will render the same unexcelled service, and furnish the same high quality of material. "Buckeye means best", and BUCKEYE LIGHT STEEL RAILS are better still. All sections from 12 lb. to 40 lb. inclusive always in stock for quick shipment.

Let us have your inquiries, and we will take the chance of developing them into orders on our books.

THE BUCKEYE ROLLING MILL COMPANY
STEUBENVILLE, OHIO

cotta apartment house, twelve-story, at 1140-42 Fifth Avenue, to be erected by the estate of L. S. Bryce, at a cost of about \$600,000. The Cunard Steamship Co. is having plans prepared by Benjamin W. Morris, in association with Carrere & Hastings, architects, for a new twenty-one story office building at Broadway and Morris Street, to cost about \$10,000,000. The structure will be known as the Cunard Building.

Common brick is operating under a fine call at New York. Following a compromise with the barge captains and a settlement of the strike with the brick handlers in the city, the aspect is for a prompt return to normal activities, assuring a continual supply of brick from the Hudson River points sufficient to meet all current demands. The last week in July showed exceptionally heavy delivery and sales, with demand growing; during this period forty-six barge loads reached New York and were immediately turned to account. Of these, ten were distributed at points in Manhattan, twenty-four went to Brooklyn, ten to different locations in New Jersey, and the other two were shipped to Long Island. The price holds very firm at \$15 per thousand, wholesale, alongside dock, making a figure of about \$17.85 delivered on the job at city points. The face brick market is brightening up in fine style and the only cause for complaint in this direction is the matter of deliveries; there is a good call for materials and prices hold firm at \$37 to \$50 for different grades of material. Colonial brick is selling at \$25 per thousand. Hollow tile is meeting a good call with price ranging from \$63 to \$150 per 1,000 sq. ft., according to size.

There is no cause for complaint these days in building circles at New York and vicinity. Things are "humming" in every branch of the industry from the preparation of plans to the placing of orders for materials and actual construction work. And there is no recession or thought of recession in sight. Conditions as a whole may be said to have approached the status of normal operations, and considering the short space of time in which this has been brought about, it is quite remarkable. The predominating feature of local work is housing, and numerous apartments and residences are now in course of erection thruout the different boroughs; Brooklyn is taking and maintaining the lead in this connection, and new plans, now nearing completion, show that the activity is destined to continue for months to come. Building contractors in this district are so busy that work requiring immediate attention is being refused in a number of instances, and the estimating of plans for new structures deferred. As an idea of the trend of affairs thruout this section, it is interesting to note that the new projects announced for one of the last weeks in July aggregated \$25,000,000 in valuation, the territory covered embracing New York state and Northern New Jersey.

In connection with the investigation of current high prices for building materials by the Joint Legislative Committee on Housing, now under way for some time past, some interesting testimony has been presented by brick manufacturers in the New York district. In being called upon as a witness, William K. Hammond, manufacturer of common brick, with plant at Dutchess Junction, N. Y., told the committee that he preferred to sell brick direct to dealers, rather than to building contractors and builders, inasmuch as there was greater reliability financially in such a transaction. He set forth that the selling prices for brick manufactured at the different plants in the Hudson River district are uniform, as the cost of production is practically the same. In being questioned as to how costs were figured, Mr. Hammond said that the cost of production was carefully figured, and that this being the same among the different manufacturers, was

DOES YOUR PROFIT GO UP IN SMOKE?

Canton Rocking and Dumping Grates in your plant mean a large saving in fuel, or a greatly increased production with the same amount of fuel.

By improving combustion, they make a coal saving of at least 10% in comparison with stationary grates. Peak loads can be maintained easily.

If you are interested in cutting down fuel cost and improving combustion, write for Bulletin B, Form 14.

Canton Grate Co.,
1706 Woodland Ave., N. W.
CANTON OHIO

**CANTON GRATES SAVE FUEL
FOR BOILERS FOR KILNS**

used as the basis in cooperation in arranging the selling price. He remarked that the manufacturers do not fix prices. In connection with this testimony, it was brought out that previous to the war in 1914, prices for good, hard common brick at New York were \$5.75 per thousand in cargo lots. The high cost of labor, fuel, other factors of operation, and transportation is responsible for the prevailing high prices. As an example, it was pointed out that it used to cost sixteen cents a thousand for towing brick from the Hudson River plants to New York, whereas the cost is now fifty cents. He said that the annual production of his yards was about 28,000,000 brick in a season, and that last year this output had dropped to a little over 2,000,000 brick. He stated that one of his plants with a yearly capacity of about 12,000,000 brick has not been operated since 1916, owing to the scarcity of labor and the meager call for material. Robert L. Findlay, vice-president of the Hay Walker Brick Co., testified before the committee that labor primarily was responsible for the increased prices of face brick, which have advanced from \$22 to \$25 a thousand in 1914 to \$36 to \$40, and above at the present time. The Hay Walker Co. is one of the principal concerns in the face brick business in this section.

Ohio

The plant of the Toledo Vitriified Brick Co., Rossford, Ohio, was damaged by fire on the morning of July 16, the loss of the building being estimated at \$500 and its contents at \$3,500.

The Shannon Construction Co., of Akron, Ohio, of which Charles W. Shannon, formerly treasurer and superintendent of the Clay Products Co., Brazil, Ind., is president, will begin work at once on the erection of 750 homes in Akron and vicinity for employes of the Firestone Tire & Rubber Co.

The Alliance (Ohio) Brick Co. has begun the erection of brick plant No. 2, with a capitalization of \$500,000 fully paid up. It is reported that no stock is offered for sale and no bonus is asked. The brick will be burned in a continuous kiln.

The Dix & Mason Brick Co.'s plant site on North Main street, Marion, Ohio, was sold on July 18 to C. S. Lippincott. The plant has not been in operation for years. Mr. Lippincott has not announced his plans, but it was stated that the ground probably would be laid off into building lots.

Clay product manufacturers are sometimes interested in other lines of industry, but the Finzer Brothers, clay manufacturers, of Sugar Creek, Tuscarawas County, Ohio, are also tillers of the soil. They have just harvested 1,393 bushels of wheat from their seventy-acre farm, which is a record yield for any farm in that part of Ohio.

Max H. Rieser will soon start the erection of a three-story business block at Third and Main Streets to cost \$80,000. Steps have been taken for the erection of a \$50,000 optical building on the campus of the Ohio State University. F. B. Chapman will soon take figures on a \$65,000 business block on South High Street, which will be 160 by 42 feet.

In Columbus during the week ending August 2, permits were issued for new work amounting to \$135,140, bringing all project work during the present year up to \$3,340,000. About \$90,000 of the permits issued during the past week represents dwellings. There has been an average of about twenty dwellings started each week since the building campaign is on. It is estimated that more than 400 new dwellings have been started this season.

The building program in Central Ohio is now under full

Type "B," ¾ cu. yd. ERIE Shovel, owned by McCrady Bros., Braddock, Pa.



"Very stiff clay, 750 cu. yds. a day"

"We have loaded, on the average, 750 cu. yds. of very stiff clay per ten-hour day."

"We prefer the ERIE to any other shovel we have ever used."

In our opinion the ERIE has everything else of her size beat a mile."—*McCrady Bros., Braddock, Pa.*

The ERIE Shovel is both speedy and reliable. It is built far stronger than the usual standard of steam-shovel construction. We would like to send you a bulletin showing just what the ERIE Shovel can do. Write for a copy of Bulletin B.

BALL ENGINE CO., Erie, Pa.
Builders of ERIE Steam Shovels and Locomotive Cranes, ERIE Railway-Ditchers, BALL Engines

ERIE **Revolving Shovels**

BALL
Engine Co.
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Playing Safe!

When you entrust your drying problems to the oldest and largest dryer specialists in the world, you are playing safe.

Proctor *for* **All Clay Products**
DRYERS

Are reliable, economical, fireproof and durable.

Our catalog tells all about Proctor Dryers and drying practice. Send the coupon and get your copy.

Philadelphia Textile Machinery Co.,
Seventh Street and Tabor Road, Philadelphia, Pa.

Without obligation or cost to me, please send copy of your catalog on.....(give name of material to be dried).

Name

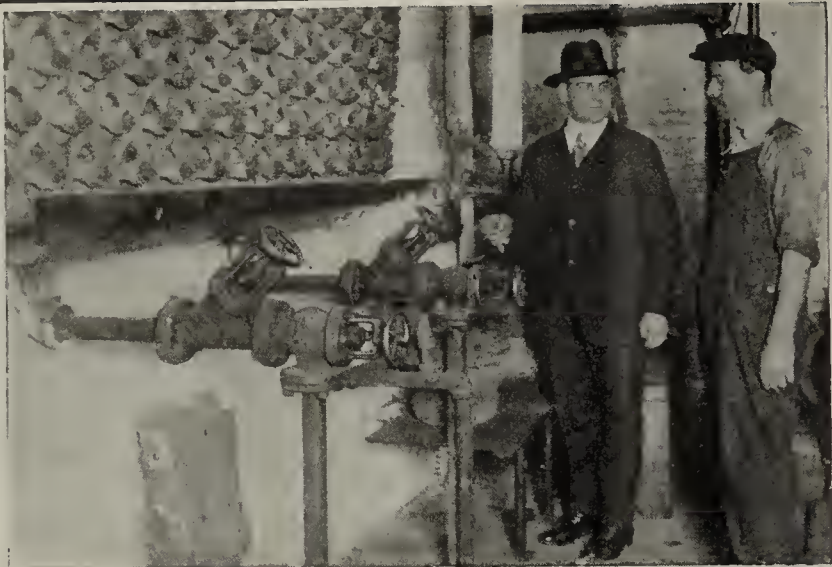
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Company

Address

Philadelphia Textile Machinery Co.
Drying Machine Specialists
Philadelphia, Pa.

57



**"On 5 Years—not one cent for repairs
and we blow off our boilers every eight hours"**

"Never had to renew a seat ring, never had a wrench on them, and, following out our policy, replaced the discs once a year," said Mr. Frank Kogler, Chief Engineer of the Beehive Ice Co., Brooklyn, N. Y., when talking about the service he gets from the genuine Jenkins Valves in his boiler blow-off system. The combination consists of a Jenkins Standard Blow-off or Y Valve, and Angle Valve, both Iron Body with outside screw and yoke, working under a 150-pound pressure.

The steady, every day, year in and year out service of Jenkins Valves comes from a thorough knowledge of valve requirements learned by over 50 years' practical experience and meeting them with a valve of the RIGHT construction for each specific use.

Know genuine Jenkins Valves
by the Jenkins "Diamond Mark."

JENKINS BROS.

New York
Chicago

Philadelphia
Montreal

Boston
London



Jenkins Valves
2048-J

sway and a large number of structures have been projected. The great majority of the new building projects are for dwellings and apartments, but there is a fair sprinkling of business blocks, factory buildings and other larger construction work. On the whole, the prospect for an active building season is good and it is believed that if no untoward incident occurs it will continue right up to the cold weather.

One of the interesting phases of the building situation in Columbus is the materialization recently of a number of larger building projects, many of which have been hanging fire for some time. The Timken Roller Bearing Co., of Canton, will soon award a contract for a \$1,000,000 factory plant in Columbus to be operated as a branch of the Canton plant. The main building will be of the saw tooth variety and will be 350 by 400 feet. In estimating the cost the expense of the equipment is included.

It is reported that a deal which will result in the merging of eight of Crooksville's (Ohio) largest pottery plants is underway. These properties are to be taken over by New York capitalists, the appraisers for same having been at work during the past fortnight. The plants involved in the deal are: Star Stoneware Co., Burley and Winter Co., two plants of the A. E. Hull Pottery Co., Muskingum Pottery Co., Keystone Pottery Co., Burley Pottery Co., and the Crooksville Pottery Co.

The Alliance (Ohio) Brick Co. announces to the trade under date of August 4, that all quotations are withdrawn. This covers all of their products. They have been compelled to do this particularly because they are over 4,000,000 behind on Alliance Ruff brick, and between forty and fifty cars behind on Ruff-face building tile. This means that without any more orders, they cannot catch up with the present demand until the snow flies. The company also says that labor is growing scarcer and higher and coal and freight difficulties are beginning to prevail.

Employees of the American Clay Machinery Co., Bucyrus, Ohio, held their annual outing at Cedar Point on Lake Erie, Saturday, July 26. The picnickers took part in a very lively program arranged for the morning, afternoon and evening, special committees having been appointed in advance of the day to take care of the various features of entertainment. An attractively gotten up ten-page booklet, which enumerated the various events in a clever manner, added to the enjoyment of the occasion.

Lima, Ohio, is to have one of the largest brickmaking plants in the state as a result of the purchase of a plot of ground north of the city, by Theodore Edstrom, of Chicago, who represents a large syndicate formed to back the enterprise, according to recent reports. The land was owned by F. A. Burkhardt and C. W. Burkhardt. The new plant, which will have an excellent supply of clay, will be constructed as rapidly as possible. Lima was chosen for the new plant not only because of the available and necessary clay, but because of unexcelled shipping facilities.

Despite the high cost of materials and labor, building operations in July of this year in Columbus, Ohio, far surpass the record of the corresponding month in 1918. During the month the building department issued permits for 359 jobs aggregating \$658,710 as compared with 122 permits and a valuation of \$129,905 for July of last year. For the first seven months of the year the department issued 2,021 permits for work aggregating \$3,378,450 as compared with 1,197 permits and a valuation of \$1,757,945 for the corresponding period last year.

Rollin's Barium Carbonate

"We find that the use of Barium not only entirely eliminates the scum caused by sulphates, but deeper and richer colors result than would be expected." So writes a clay products company in Kentucky.

It is obvious to any clay products manufacturer that Barium Carbonate added to the pug mill or to the dry pan will produce brick and tile that command a higher price. It will build up more business than an inferior product which is "off color" and marred by white streaks.

Barium Carbonate makes the salt glaze stick to sewer pipe.

We can show you how the appearance of your ware can be improved, and can give you names of clay concerns who are profiting today by the use of Barium.

Write Us NOW

The Rollin Chemical Co.
(Inc.)

Charleston, W. Va.

The Ironclay Brick Co., of Columbus, Ohio, has just closed a deal for the purchase of all of the stock of the Central Mortar & Supply Co., located on Fifth, near Cleveland Avenue. The concern has a well-equipped plant for the manufacture of mortar which will be increased. The concern will also handle brick, flue lining, sewer pipe and practically all kinds of clay products. It is planned to retail coal during the winter months and equipment is being installed to take care of that business. The headquarters and general offices will be located in the Rugery Building.

Stockholders of the American Sewer Pipe Co., Akron, Ohio, held a meeting on August 8 to vote on changing the par of the common stock from \$100 to \$50, and to authorize an issue of \$2,000,000 of seven per cent. cumulative preferred stock, and to retire the \$1,234,000 outstanding bonds. The capital is to be increased to \$7,500,000 and 40,000 shares of common stock will be held in the treasury to be exchanged for preferred stock when offered for conversion in the ratio of two shares of common stock, par value \$50, for one share of preferred stock, par \$100. The name of the company will be changed to the American Vitrified Products Co.

Bids were opened August 5 by the Ohio Highway Commission for a number of road improvement jobs, among which were several brick paving projects. A stretch of 4.12 miles will be paved with brick in Columbiana and Mahoning counties. Another stretch in Cuyahoga County of 9.75 miles, will be brick paved. Two jobs in Crawford County, one of which is 1.74 miles and the other 2.73 miles, will be paved with semi-monolithic brick. Darke County will have a stretch of 4.31 miles long. Hamilton County will have three roads paved with semi-monolithic brick. Brick among other materials is specified on a job of 4.9 miles in Summit County.

A large interest of the Ransbottom Bros. Pottery Plant, at Ransbottom, Ohio, was sold recently to the Robinson Clay Products Co., of Akron. It is reported that as a result of this deal an immense pottery plant will be built on the eastern coast, which would result in the permanent closing of the Roseville plant and several small plants in this section. Thru this deal the Robinson Clay Products Co. becomes a part of the American Clay Products Co., with headquarters at Zanesville, and hereafter a very large per cent. of the stoneware manufactured in the United States will be sold thru this organization of which the following are its officers: F. M. Ransbottom, president; Nelson McCoy, secretary, and F. F. Hull, treasurer.

The labor situation at the various face brick plants in the Hocking Valley field is unchanged, altho manufacturers generally are uneasy. Because of the attraction of iron and steel mills as well as coal mines many of the brick workers have been taken away from the plants and there is quite a large proportion of green help. None of the plants in the Hocking Valley region are able to work to full capacity because of shortage of labor. The contracts recently entered into with the workers appear to be generally satisfactory to the men. Car shortage is now appearing on many of the railroads and that is affecting the shipment of brick and other clay products. This situation is expected to grow worse as the season advances and as more cars are needed for the transportation of crops and coal.

Architect J. N. Bradford is preparing plans for the two new structures to be erected by the Ohio State University. One will be a Woman's Union, which will be 50 by 130

Perforated Steel Screens

Of Every Description

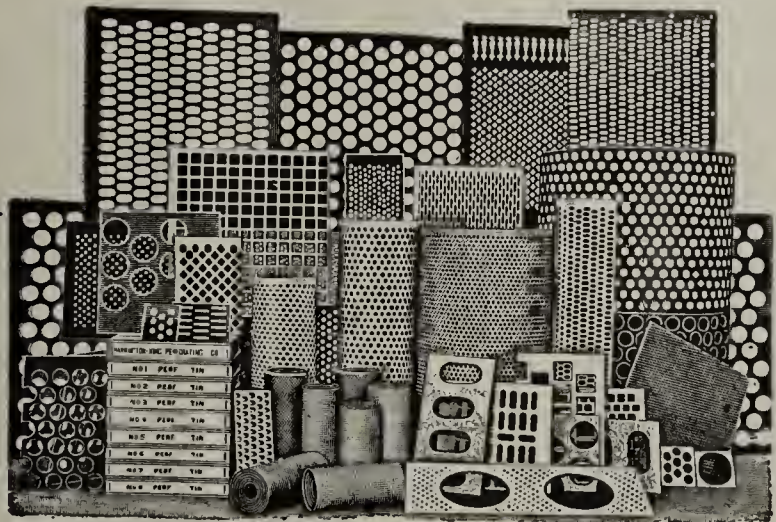
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Gravel, Stone and Cement

No Other Screens Will Give You Equal Capacity,
Durability and Satisfaction

The Harrington & King Perforating Co.

635 N. Union Ave., Chicago, Ill.

NEW YORK OFFICE: 114 Liberty St.



BUCYRUS



For Digging Shale

The massive construction and great power which are found combined in

BUCYRUS STEAM SHOVELS

have made them famous the world over for long life, economic operation, high steady output and power.

Let our representatives tell you what they can do for you.

110-C—3½ to 6 cubic yd.	78-C—2½ to 3½ cubic yd.
103-C—3½ to 5 cubic yd.	68-C—2½ cubic yd.
88-C—3 to 4 cubic yd.	

Also all sizes revolving shovels and dragline excavators.

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New York, Chicago, New Orleans, Minneapolis, Denver,
Portland, Ore., San Francisco.

"The S S S Special" Automatic Soft Mud Brick Machine



The "S S S Special" is the ONLY Automatic Soft Mud Brick Machine. It is Brick Machine, Bumper, Dumper, and Sander, all combined in one Great Machine.

**It Saves Labor and
Improves Your Product**

The "S S S Special" means
Improvement Advancement Progress

The Arnold-Creager Co.
New London, Ohio

feet, and three stories high and the other a chemistry building, to cost in the neighborhood of \$85,000. The C. & E. Shoe Co. contemplates the erection of a large factory building on East Fulton Street, to cost in the neighborhood of \$100,000. Plans and specifications are being prepared by Architects Richards, McCarty and Bulford. The Union Clothing Co. will soon start the erection of a building 87½ by 62½ feet immediately in the rear of the present structure, to cost about \$120,000. George Bobb & Sons Co., wholesale grocers are taking figures on a new business block to be occupied by the company, to be located on North Front Street. The building will be 93¾ by 187½ feet and five stories high. The cost will be in excess of \$200,000. The D. L. Auld Co., manufacturing jewelers has started the erection of a modern plant at Fifth Street and Fifth Avenue, to cost about \$65,000. The Columbus Pharmacal Co. will duplicate its present building on Oak Street, at a cost of about \$85,000. The Lawwell-McLeisch Co. will soon start the erection of a \$35,000 garage and sales room at Fourth and Elm Streets. Andrew Dobbie plans to erect a modern business block to accommodate his department store at Third and Broad Streets. The size will be 62½ by 187½ feet.

Oregon

The Bend (Ore.) Brick & Lumber Co. is doing a record business this season, according to A. H. Horn. Mr. Horn states that before the season is over he will have produced more than three million brick which is an output far in excess of any of the former years. The company has received orders for brick as follows: Kenwood school, 2,000,000; Sather-Hudson building, 90,000; O'Donnell building, 140,000; City of Bend, for fire station, 75,000; Deschutes garage, 160,000; First National Bank of Redmond, 80,000. It is expected that the order for the new Catholic church will reach 200,000. Two buildings in Prineville, for which Mr. Horn has orders, are to be erected of brick.

Pennsylvania

The Millin Brick Co., St. Mary's Pa., has been incorporated with a nominal capital of \$5,000 to manufacture building brick of various kinds. W. G. Baner is the principal incorporator.

The Pennsylvania Products Co., Dillsburg, Pa., has acquired the local brick manufacturing plant, and has arranged for immediate extensions and improvements to increase the present operating facilities and output. The company will operate clay properties adjacent to the plant, and has purchased a steam shovel for clay mining activities.

The Crescent Refractories Co., Curwensville, Pa., is operating its various plants at a good rate of production. Beyond its Curwensville works, the company has plants at Lumber and Clearfield, Pa., and all specialize in high-grade fire clay refractories. The works have a total capacity of about 275,000 nine-inch equivalent daily. Among the different products are furnace linings, gas producer and flue linings, furnace brick, refractory ground and batch clays, special refractory shapes, calcined flint clay grog, and kindred specialties.

The demand for common brick, burned clay products, and other basic building materials is on the increase at Philadelphia and vicinity. Local brick manufacturers and building material interests view the outlook with favor, and the general tone of affairs is decidedly encouraging. Prices hold

well at present levels, and there is no fluctuation worth recording. Good, hard common brick is selling for \$19 a thousand, while an ordinary grade of common brick is quoted at \$17.50. Hollow building tile is selling at from \$60 upwards per thousand according to size, while face brick, operating under good demand, is quoted at from \$40 upwards, a good grade of material being priced at around \$45; light greys, buffs, and iron spots are in popular demand. Enamel brick, American size, is selling at around \$100 per thousand, while fire brick is quoted at \$70 per thousand for standard material.

Each month and each week is bringing about improvement in building circles at Philadelphia and its environs. Construction work is hitting a firm, steady, upward trend, with every evidence of reaching a normal or near-normal status at an early date. The records of the local building department for the month of July show that permits were issued for construction aggregating \$6,693,785 in valuation; while this is a little less than the month of June, it shows that building work is going on, and in this, housing operations are playing a prominent part. The bulk of construction hereabouts at the present time covers apartments and residences of different types, and as brick is the popular material thruout this locality, the demand for this commodity is constantly on the increase. Philadelphia architects and engineers are busy, and a large number of important projects are now under way; these, it is expected, will be ready for estimates at an early date, going to enhance the construction totals now being evidenced.

Tennessee

Plans have been completed by Architects G. M. Shaw & Co., Memphis, for new safe deposit and reception room and vault in the basement for the Commercial Trust and Savings Bank, Main and Union Streets, Memphis, to cost about \$36,000. The contract for the general work has been let to Joe Bloomfield. The room will be all tile work.

The brick industry of Tennessee, under the inspiration of more building in June and still more in July has become more active. The market is reported somewhat stronger by manufacturers and dealers. The clay mining industries in Tennessee are having a normal summer business. Fancy pottery goods are on display at several of the big stores in Memphis, Nashville and Chattanooga. Tile for building purposes is in good demand. Market is unchanged on sewer pipe, but there is a good demand.

Texas

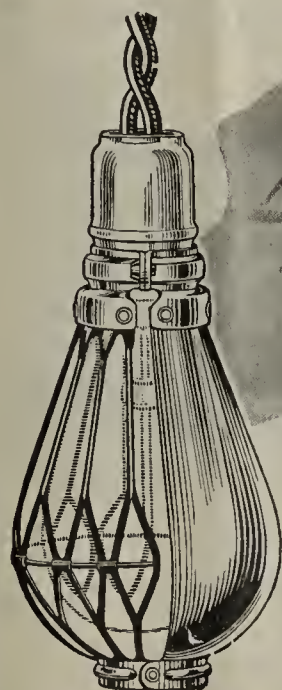
J. L. Hill and others have formed the Eastland Brick Co., at Eastland, Tex. The company has been incorporated with a capital stock of \$20,000.

W. D. Fisher, a county judge at Canadian, Tex., and others contemplate the formation of a company there for the purpose of manufacturing brick. Information on machinery is being sought.

The Mexia (Tex.) Press Brick Co., has been completely overhauled and its capacity increased. New office buildings have been erected and some new machinery installed. John Neece has recently taken charge of the plant and states it will be run at full capacity.

A site has been secured for a brick plant in Cisco, Texas, and the secretary of the Chamber of Commerce is working with the promoters of this project and the time of completion will depend entirely upon the time neces-

(Continued on Page 345)



THERE'S A DOUBLE ADVANTAGE IN THIS LAMP GUARD

1—Prevents lamp breakage and unauthorized removal; eliminates fire hazard; prevents injuries to employees due to flying glass.

2—Keeps the glaring light rays out of the workman's eyes; concentrates the light on the place or work to be illuminated.

FLEXCO-LOK REFLECTOR GUARD

not only protects the lamp but it prevents eye strain by keeping direct light rays on the work.

Flexco-Lok Reflector Guards are made of expanded steel, well coated with tin. Easy to adjust. Made in sizes to protect up to and including 60 Watt Mazda and 75 Watt, Type C, Nitrogen lamps.

Write today for prices and full information.



Flexible Steel Lacing Co.,

Also Manufacturers of

ALLIGATOR STEEL LACING

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CHICAGO, ILL.

Rossendale-Reddaway

FABRIC BELTS
for
EVERY
SERVICE



“Right” vs. “Nearly Right”

When it comes to belts you can put one kind of a belt on all the drives in your plant and make it do. No two drives are exactly alike but a belt that is “nearly right” will turn the pulleys after a fashion.

Yet “nearly right” isn’t good enough for your product—nor is it enough for your belting, from the point of view of economy, either in power transmitted, wear on shafts and bearings and life of the belting itself.

It is wise to buy from one belt manufacturer, whose quality of material and skill, born of long experience in belt making, you know will give you a belt you can depend upon. But for that one manufacturer, select the firm whose line is extensive enough to furnish the right belt for the particular conditions of your drive.

The opportunity, afforded by the Rossendale-Reddaway line of fabric belts of every type, for you to select the right belt for the drive, makes all the power of your prime mover available with the least maintenance and insures continual, satisfactory service.

Ask our engineering department for recommendations for your difficult drives. Their advice is competent—and free.

**The Rossendale-Reddaway
Belting and Hose Co.**

Newark, N. J.

2003-R

Q U E S T I O N S

A Two Cent Stamp May Bring
You Advice That Will Stop
a Waste, Improve Your Ware
or Lower Your Production Cost

Address all communications intended for this department to “Editor Questions and Answers,” care of “Brick and Clay Record,” Chicago.

Can You Furnish Aid on Dampers?

915. California—We are having trouble with our stack flue dampers in our magnesite kilns in which we burn ware that matures at conc 19-20. The metal dampers burn out and the fire clay dampers are cumbersome and the iron supports burn out. We have made the dampers of large fire clay tile with the supporting rods running thru so they are protected from the direct action of the flame. The iron, however, is weakened by the intense heat and breaks, permitting the damper to fall.

We will be indeed grateful to you or any of your readers for helpful suggestions.

The above question with an answer including an appeal for readers of *Brick and Clay Record* to send in suggestions, appeared in the July 15 issue. Since the publication of that number the following information has been received from Robert Twells, of the Key-James Brick Co., Alton Park, Tenn. He suggests that the cover of the damper pit be left open a little so that a very thin stream of cold air can pass down between damper and the heat coming from the kilns. This will preserve the dampers and help in part to retard the draft so that the damper will not have to go down so low.

Another suggestion in meeting this problem is to use some insulation material such as “Sil-O-Cel” for protecting the iron bars. In this case the holes in the fire clay tile will have to be made unusually large but if no other method solves the problem this system will have to be resorted to.

✂ ✂ ✂

Does Brick Swell?

917. Maine—I am enclosing a clipping which interested me, because to my mind it misrepresents the facts. My theory is that a hard burned brick will absorb but a small amount of moisture, and when a brick is soft enough to absorb a large amount of water the frost will disintegrate the brick instead of “swelling.” Is my idea right or wrong?

The clipping which accompanied the above read as follows: “Houses and walls, indeed, all things made of brick, do grow, and this fact is known to architects, who sometimes have to allow for it when making plans for buildings,” says “London Answers.”

“In the old days, when the clay of which brick were made was mixed with water before being baked, the amount of growth was not noticeable; now that no water, or very little, is mixed with the clay, which is, therefore, said to be dry baked, the brick absorb moisture and swell sometimes to a considerable extent.

“Some years ago in a garden at Ely a pier was built of dry baked brick and the garden hose was turned onto this pier for a considerable period every day for some weeks. At the end of this time the pier was measured, when it was found to have grown some inches.

and ANSWERS

Best Authorities in Every Clay working Branch Are Called Into Consultation—Their Advice is Free to You, Thru These Columns

Should a reply be desired by letter, send a stamped and addressed envelope with your question, and it will be answered promptly.

"Cement is another substance which grows. That is why you may often see on station platforms and on wall copings built of cement one of the joints missed out here and there. "The greatest growth naturally takes place where cements and brick are used together, as happened in a house of which the parapet was built of brick placed endways and cement supported on iron. The growth in this instance was so great that quite large spaces were visible between the iron supports and the parapet."

The answer sent to our correspondent embodied the following: Your idea concerning the matter of brick and the effect water and frost has on it, is absolutely correct.

The clipping which you enclose, and which is very interesting, certainly misrepresents the facts beyond all reason. We hope you will endeavor to correct these mis-statements and you can be assured that there is absolutely no truth in them.

A hard burned brick will absorb a very small quantity of water and will not expand one particle, and as you state in your letter, when a brick is soft enough to absorb sufficient water, the frost will disintegrate the brick instead of "swelling."

* * *

Who Operates a Diesel Engine?

916. Illinois—We desire to know the practicability of using a Diesel oil engine in a clay plant. Do you have any information concerning plants using this power generator and what success they have experienced? We would appreciate any information you have concerning the size of the unit used by any clay plant, what clay plants are using it and what they think of the Diesel engine.

Brick and Clay Record has no information at all concerning the use of the Diesel engine in the clay products industry and would thank any concern for information that would aid the correspondent.

* * *

WAKE OF THE NEWS

(Continued from Page 343)

sary to secure machinery. The site secured contains a very fine shale in sufficient quantities for large operations. While the name of the company has not been stated it is expected that it will be known as the Cisco Brick Co.

It is reported that the Acme Brick Co., of Fort Worth, Texas, has completed negotiations for an up-to-date brick plant to be located at Perla, Ark. Work will commence on the plant within the next sixty days, and the plant is expected to be in operation by the first of next January.



The Pulsometer kept two laps ahead of St. Swithin-J. Pluvius and the rest of the "Water Board"

Guess the old boys get the wrong idea of the "great American draught" and thought they might help by spilling a little H²O as they did in July. They didn't stop at a little and their generosity certainly played havoc with some contractors, but didn't keep those who own PULSOMETERS from completing jobs on schedule; furthermore, if there was a bonus for finishing the job ahead of time, they got it.

Keeping water off the job is what a PULSOMETER is supposed to do and does—you can't drown it.

The Sahara has nothing on the places where a PULSOMETER has been active.

Labor is high and space be scarce but that means nothing in the life of a PULSOMETER because it RUNS ITSELF without care or attention—just feed it steam and it PUMPS.

And if your oil stocks are "shooting up" it's no fault of this sturdy steam pump—because it doesn't need lubrication—no friction in its operation—no glands, cams, pistons, stuffing boxes, no contacts any place in its make-up.

No special "harness" for a PULSOMETER, it "rides" well any place, "hitched" to anything.

Over 154,000 PULSOMETERS have gone out on their time-saving, money-saving, labor-saving errands and have never failed to "bring home the bacon."

"Show me" on your letter-head brings you complete information.

PULSOMETER STEAM PUMP CO.

Executive Offices: 224 W. 42d St., New York City

Agencies in all the principal cities

Boston: 391 Atlantic Avenue.	Cincinnati, Ohio: Elm and Pearl Streets.
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San Francisco, Calif.: 139 Townsend Street.	Cleveland, Ohio: 1227 West Ninth Street.
	Houston, Texas: H. A. Paine.
	F. H. Hopkins & Co., Montreal, Quebec, Canada.

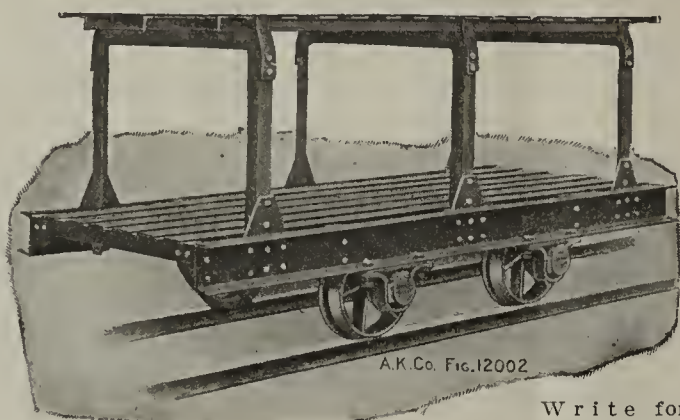
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PULSOMETER
STEAM PUMP

Put



ON THE JOB IN YOUR BRICK PLANT



Write for
catalogues and
prices. Let us help solve your transportation problems

Dryer and Transfer Cars to haul the brick from cutting machine or press to kiln; V-Shape Dump Cars to transport the shale to shale room; Portable Track for the shale bed. Steel Ties, Rails, Frogs, Switches, Cast Plate Track, Turntables, and

ELECTROMOBILE
TRADE MARK
INDUSTRIAL TRUCK

Tractors, Trailers and Special Bodies Koppel Industrial Car and Equipment Co.

Purchaser of:
Orenstein-Arthur Koppel Company,
First German enterprise sold by Alien Property Custodian.

Plant: KOPPEL, Pa.

Sales Offices: NEW YORK, PITTSBURGH, CHICAGO,
SAN FRANCISCO



Half way between Dallas and Fort Worth, Texas, and only fifteen miles from each city, the Dalworth Park & Racetrack Co. is to build an automobile speedway, constructed of brick. The track is to be one and one-half miles in circumference. Two grandstands are to be constructed, having a seating capacity of 50,000 people. A judges' stand will be built between the two grandstands. While the speedway will be ready for racing by fall, work on the grandstand will not be completed until spring. In all, the enterprise will entail an expenditure of approximately \$150,000 when complete.

From a small beginning made several years ago the brick manufacturing business of Ferris, Texas, has grown until the town now has the distinction of being one of the largest in the world in the matter of daily output of brick. Over 10,000,000 common building brick are manufactured in Ferris each month, and when the seventh plant is completed this summer this will be increased to nearly 14,000,000. It was only about twenty-seven years ago that Captain J. T. Hurst and Tom Pogue, of Dallas, started the brick industry at Ferris. They put in a plant with a capacity of 40,000 brick a day. They failed to obtain enough land on which to operate, and the plant had to close down. T. T. Cole, of Ferris, then realized the value of the land and the possibilities of the brick-making industry, and purchased large tracts surrounding the plant. It was really Mr. Cole who founded the industry. He is now the largest operator in Ferris, and three of his sons are now managing three of the largest plants. The industry has grown so rapidly that many people of Texas do not know that such an enormous manufacturing center exists in the state.

Virginia

Reports from Virginia show that the United States Brick & Lime Co., of Roanoke, has commenced the erection of an addition to its works to increase the present capacity.

The Norfolk Pressed Brick Co. has been formed at Norfolk, Va., with a capital stock of \$5,000 by R. A. Brown, E. W. Grandy and C. L. Voight.

Three additional kilns are to be built at the plant of the Glasgow, Va., Clay Products Co.'s plant. The products of the firm will hereafter include shale and face brick and probably drain tile. C. H. Locher, Jr., is general manager of the plant.

Canada

D. A. Lochrie, Toronto, and family are on a motoring trip up north. They expect to be away for three weeks.

Chas. B. Lewis, Toronto, and family sailed for England on the steamer "Megantic," from Montreal, on July 15. They expect to be away until October.

Mabel Gertrude, daughter of Mr. and Mrs. J. S. McCannell, was married on July 11 to Wm. J. McKenna. Mr. and Mrs. McKenna will live in Hamilton.

Fire destroyed a portion of the plant of the National Brick Co., Laprairie, P. Q., recently. Head office is at 511 St. Catherine Street West, Montreal. A. T. Alexander is secretary.

The Shale Brick Co., Limited, who have purchased the plant of the Ontario National Co., at Cooksville, are operating the plant which has been closed down for some time. P. L. Fraser, the manager, Crown Office Building, Toronto, states that they have some good orders on hand. A. McArthur, Cooksville, is superintendent.

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

Pulverized Coal Catalog

During the past couple of years a number of clay plant managers have been giving considerable thought to the use of pulverized coal for burning brick, tile and other clay ware. While the use of pulverized coal in this industry is still in an experimental stage, it nevertheless holds a large amount of interest, particularly for those plants where there seems to be special opportunity for large expansion in their operations.

The Bonnot Company, of Canton, Ohio, needs no introduction to the clay products industry, altho it may not be generally known, even to their close business friends, that for the past five years they have been manufacturing and installing "Holbeck Pulverized Coal Systems."

These systems have become very popular in the cement, steel and other large industries, and the Bonnot Company have just issued a very attractive and complete catalog, describing these systems and giving illustrations as well as data covering actual installations.



Bonnot Pulverized Coal System Catalog

This catalog ought to be of great interest to the larger clay products manufacturing plants, and to those who are seriously interested in the use of pulverized coal The Bonnot Company will gladly send a copy.



Proctor Dryers

Because it contains so much information of vital interest to clay-products manufacturers, the circular letter recently sent out to the trade by The Philadelphia Textile Machinery Co., Philadelphia, is reproduced as follows:

"Is a 96 per cent. saving in time and 90 per cent. saving in floor space worth considering in the drying of porcelain, china or clay products?"

"The General Electric Co. established this record by the use of machinery. It took 30 days by the old method to dry heavy pieces of porcelain, but now a Proctor Dryer does the same work in 30 hours, which is a saving of 96 per cent. in time. This means that 23 hours out of every 24 are saved in the drying of electric insulators. It also represents a saving of 90 per cent. in the floor space. Besides this, the Proctor Dryer has eliminated the danger of spoiling the ware and has made absolutely uniform results possible.

"By substituting machinery for the old-fashioned drying-



Figure the cost of UP-KEEP

Perfect mixture and saving in labor are not the only points to consider when you buy a clay digging machine—cost of upkeep is of equal importance. A digger that mixes clay and saves labor, but runs up expense for fuel, and repairs, is an expensive machine at any price.

"The up-keep of the Buckeye Traction Clay and Shale Digger is small," writes one of our customers. "The only thing wearing out to any extent being the spades of the cutters that shear the clay off, and the side cutters. Our blacksmith relays these with steel again. It takes only two sets of cutters to run the season." The cost for oil and grease is negligible.

Write us about the conditions in your clay pit. We will be pleased to send you figures and data.

The Buckeye Traction Ditcher Co.
Findlay, Ohio

Buckeye Traction Digger

The new Model C. M. is equipped with a combination conveyor which enables operator to change his discharge from pit to bank delivery, alternating as desired.



Kissel Trucks For Uninterrupted Transportation Throughout the Winter Months

Owners in the Brick and Clay Industry realizing the great dependence they must place on motor trucks this winter are investing in Kissel trucks equipped with the All-Year Cab that—

Protects drivers in wet and stormy weather—removes the necessity of layups on account of rain or snow storms—discourages speeding to get under cover—diminishes possibilities of accidents and excessive wear and tear—increases the efficiency of the drivers by improving driving conditions—insures competent handling and care of trucks by attracting high class operators—keeps trucks in operation the year around regardless of weather.

In winter weather it is entirely enclosed, giving the driver a warm, dry, comfortable housing at all times.

For summer, the windshield, side, door and rear windows are easily and quickly removed.

Five sized Kissel trucks— $\frac{3}{4}$ ton to 5 ton. Winter is just ahead—see your nearest Kissel dealer immediately. Catalogue, specifications and prices on request.

KISSEL MOTOR CAR CO., Hartford, Wis., U.S.A.

KISSEL TRUCKS

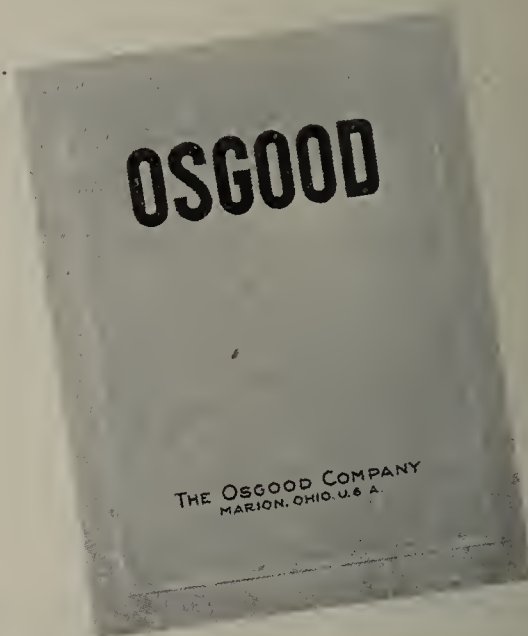
room you, too, can secure a better product and more of it, in less time with a saving in space and labor."

✱ ✱ ✱

The Osgood Catalog

The Osgood Company, of Marion, Ohio, has just issued a new catalog with illustrations and descriptions covering the different types of Osgood Power Shovels, many of which have already become popular in the clay products field.

The Osgood Company is composed of experienced men who have made many years' study in the construction and practical use of steam shovels, and this permits them to successfully study every kind of excavating problem with



Osgood Power Shovel Catalog

the idea of helping to solve it in such a way as makes for the greatest measure of economy.

This new catalog will be cheerfully sent by the company to any reader of *Brick and Clay Record* who asks for it, and it ought to be in the hands of every clay plant manager, because of the very valuable information it contains.

✱ ✱ ✱

Represents Celite Products

Mr. Vincent A. Lambiase, who has for a number of years played an active part in the sales promotion of the Celite Products Company, will represent that company in the Bronx, Brooklyn and Long Island districts.

Mr. Lambiase's knowledge of the company's products (Sil-O-Cel for heat insulation and Filter-Cel for filtration) will enable him to amiably handle the wants of the company's customers and prospects in that territory.

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"According to Frank A. Vanderlip, before the Senate Foreign Relations Committee, the breakdown of transportation is one of the most serious difficulties in Europe," says H. P. Branstetter, local Kissel distributor.

"Mr. Vanderlip gives as the cause for this unusual situation the fact that the locomotives of Europe were worn out before their time, owing to the pressure of war transportation, when repairs and replacements were not made as in normal times.

"To start European industries, the railroads must be supplied with rolling stock—engines and cars—and the United States is in the best position to furnish equipment at the best price and shortest delivery time.

"This will mean that not only will this foreign buying take equipment that could be used on American railroads to good advantage, but the increased work for the steel mills, locomotive and car-building companies will create a bigger demand for motor trucks.

"It is my opinion that American business concerns should immediately provide ample motor truck equipment for their transportation departments to avoid serious delays, as the industrial arteries of any country are its transportation facilities."

BRICK and CLAY RECORD

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups," to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

Let's Foster This Research

PROBABLY FEW MEN REALIZED the significance of the item which appeared on page 313 of the August 12 issue of *Brick and Clay Record*. Announcement was made of the plans of the Refractories Division of the American Ceramic Society for conducting research on problems relating to the refractories industry. Many of the members of the Refractories Division are connected with firms who maintain private laboratories for research work. In cooperation with those members who are connected with laboratories of the Bureau of Standards, national associations and universities they have agreed to work on experiments that will aid the whole refractories industry in general.

One of the results of the war has been a reawakening of interest thruout the world in scientific research applied to industry. Prior to the outbreak of the great conflict, all of the leading industrial nations, with the exception of Germany, were content to develop their manufacturing and productive processes largely by the hit-or-miss method. The inadequacy of this procedure is now plainly evident and plans for industrial research are developing on all sides.

Remarkable advances have been made in the refractories industry during the past few years, but much remains to be done. In fact, the work recently accomplished has just opened our eyes as to what important questions still remain unsolved but which only require a certain amount of research before they will undoubtedly be solved.

The inauguration of a definite program for research and investigation by the Refractories Division marks an important step in the progress of the industry and every refractories manufacturer should enlist his whole-hearted support.



An Opportunity—Jump At It

THE STRIKE GERM has so permeated the labor system of this country that the announcement of new strikes has become a part of our daily current events and is no longer looked upon as a novelty. The average citizen doesn't even trouble himself to find out what they are all about. In a good many cases he probably couldn't find out if he tried; even trained investigators have been in a quandary as to what the real grievances are. It seems that some men strike for higher wages, some

for better working conditions, and some, it would seem, for the pleasure of striking.

No one in his senses would deny labor the privilege of seeking to better its conditions. Employers cannot altogether escape the blame for the prevalence of strikes; they have an obligation to pay their workmen a living wage, and if they do not do so, we cannot complain if labor resorts to its most effective weapon.

The point is that there is too little realization of the need for cooperative effort and too little appreciation of the economic dangers of curtailed production. The time is ripe for a get-together on the part of capital and labor, for talking business.

The business conference called under the auspices of the Illinois Manufacturers' Association to be held at the Congress Hotel, Chicago, on September 8 and 9, should prove to be the opportunity for constructive work such as has not been accomplished anywhere as yet. Business associations, labor organizations, agricultural bodies, national, state and city governments, all will be invited and urged to send delegates to this great conference in order that there may be complete representation of the people and full and free discussion of the problems that so vitally affect every individual and the very life of the nation.

If every branch of capital and labor is represented, if everyone will be perfectly frank with his views, this meeting cannot help but do enormous good. It can be done. Let's put our heart and soul in the interest of this conference and end all this discontent, suspicion, and radicalism that is holding back the peace and prosperity that this nation of ours should now be enjoying.



A Prospective State Executive in Sympathy With Ceramics

LIKE MANY OTHER STATES, the business men and manufacturers of New Jersey wish earnestly for a real governmental business administration—a chief state executive who understands thru first-hand knowledge the big business problems of the day and who will work conscientiously to help solve these problems, and from which the clayworking interests are certainly not exempt; in truth, quite foremost in desired revisions and corrections.

To these ceramic interests of the state is now presented the opportunity to nominate and elect to the Governor's office in the coming gubernatorial campaign, a manufacturer and successful business man,

in close touch with national and local industrial affairs. Warren C. King, president of the King Chemical Co., Bound Brook, N. J., has been prevailed upon to run for this office; he is not a politician, has never before tried to obtain any political office or honors, but is just one of those big, broad-gauged business executives who has come up the ladder thru his own energetic efforts—a friend of the ceramic workers of the state and in full sympathy with their activities.

As president of the Manufacturers' Council of the State of New Jersey, an organization numbering many in the clayworking fields in its membership, Mr. King has shown what can be done under live, enthusiastic leadership—has shown what "being on the job" in the interests of members as a unit means, has demonstrated forcibly what enterprising and progressive thought in the right direction will accomplish.

While in a closely kindred field, in a way, to the ceramic industry, Mr. King is familiarizing himself with what is being done in this line, knowing that it is one of the primary phases of endeavor in this district; he is visiting clay plants and potteries of all kinds; he is learning first-hand what can be done with this wonderful material. This is showing the right spirit—it is proof that he has the industry well in mind. And it is this caliber of man that the industry in New Jersey needs.

With these facts in mind, it is quite natural that Charles A. Bloomfield, Metuchen, well-known in every clay section of the state and, in fact, thruout the country, has come out for Mr. King, urging his nomination and election in the interests of the industry, as well as other prominent lines of business in the state. And others in the ceramic line are flocking to the colors, believing that the opportunity is here for real advancement in this field under such a leadership.

It is on this latter point that *Brick and Clay Record* deems fit to make mention of this campaign; it keeps aloof of political affairs, excepting when such bring evidence of forwardness in the clay-working industry as a whole, and of general benefit to all concerned.



Room for Development in the Silo Business

WHEN SILO FILLING time arrives this year, there will be at least 5,000 more silos to fill in Iowa than there were two years ago. That is a conservative estimate, according to the agricultural engineers at Iowa State College. What a splendid market Iowa has been for materials that enter into silo construction. And what a splendid market Iowa will continue to be for these products.

More and more the men who own and operate Iowa's first class farm lands are becoming convinced

that a silo is necessary for the best and most profitable farming and live stock feeding. With the benefits derived thru the use of a silo by their neighbors directly before them, those farmers who so far have not purchased silos will soon be in the market for some.

The future in silo business in Iowa looks bright; but how about the manufacturers of clay silo block? Are they getting their share of the business? We have no information as to what proportion of these 5,000 silos were built of clay tile, concrete or wood, but it is reasonable to believe that more of the "other kind" were constructed than should have been.

There is no doubt but that clay tile is the best material for a silo and we urge the manufacturer in Iowa not only to aid in keeping up the rate of 5,000 silos constructed every two years by promotional work, but also, to push clay tile, which is the best. To manufacturers furnishing tile to other localities we advise the use of the above figures for Iowa as an inspiration for developing their territory.



A Side Issue on Americanization

THE IMPORTANCE of the Americanization movement is obvious. No one doubts the value of spreading this doctrine broadcast and insisting that every alien know how to speak everyday English. However, it is not enough that the foreigners learn to speak our language and become citizens of this country. Americanization should go further than this. It should raise the standard of the foreign-born's ideals. It should insist on better housing conditions.

The matter of good housing in the program of Americanization is of direct interest to the clay products manufacturer. We believe it would be worth the efforts of clay concerns to bring out this fact in centers where large firms are giving much attention to this movement. Cornelius A. Parker, of the Massachusetts Homestead Commission, in an article published by the Boston Chamber of Commerce, says:

"If our Nation is to stand the test and emerge successfully from the tremendous social upheaval of today, we must raise the standards of all our population; we must Americanize them in the best sense; and no Americanization is possible which does not take into consideration the home in which the lives of the men and women are spent, in which their children are born into the world and grow to manhood and womanhood. The old house shut out from light and air, where sunlight cannot reach disease germs which may be deposited therein, is a breeding place for disease."

Large industrial firms should be interested in housing schemes as many already are, in connection with their Americanization program. We urge the clay manufacturer to watch his opportunity in pushing the better housing idea.

TELL EXPERIENCES *with* MOTOR TRUCKS

Manufacturers in the Clay Industry Give Some Interesting Accounts as to the Use of Motor Trucks on Their Plants—Some Say That One Truck Supplants Four Teams of Horses

AS HAS BEEN THE CASE with all kinds of equipment used on the plant, in the office, or at home, there have always been cases where the piece of equipment, tho of first class quality and efficient in every respect, has failed to make good in some specific instances. The effort to make a square peg fit into a round hole will always maintain.

In the clay industry the motor truck, which has been given a thoro trial, has proven no exception to the above generality. Thru trying to adopt the use of a motor truck in conditions not at all suitable, by the employment of careless drivers, because of a lack of proper maintenance and, furthermore, because of improper supervision, the motor truck on some plants has failed to meet the expectations of the manufacturer. However, the usefulness of a motor truck in the clay industry is a known quantity, as several years of trial has shown it to be a necessary piece of equipment on the general plant. This is borne out by letters received from users, and published below, who describe their experiences with the motor truck in letters sent to *Brick and Clay Record*.

Before mentioning the contents of the above letters, we believe that it is advisable to call our readers' attention to several important factors that enter into the purchase of motor trucks. In the first place it is best to get a truck whose merits have been proven. A careful selection of the operator for your machine is also a very important consideration—for in his hands you have placed a valuable piece of machinery and much rests upon him as to the successful use of the motor truck.

CARE OF MACHINE ESSENTIAL

No make of motor truck will prove successful if you practice the evil of overloading. If thirty per cent. of your loads average four tons or over, you should not consider the purchase of a machine of lower carrying capacity. Experience proves that the extra cost of a four-ton machine

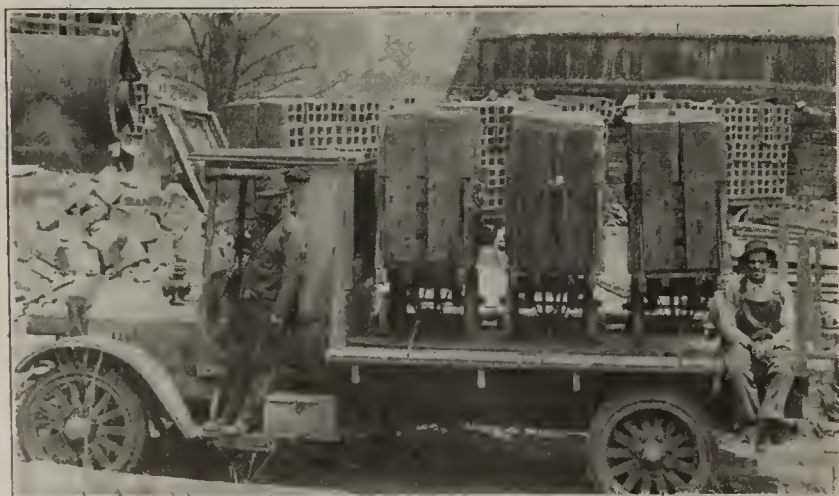
as compared to a three-ton, will be infinitely smaller than the up-keep cost of an over-taxed three-ton truck. The dangers of over-speeding do not need to be enlarged upon, as results are always evident. It is just as necessary to have frequent inspections made of your motor trucks by competent mechanics as you have deemed it wise to rely upon a veterinary surgeon for the satisfactory condition of your horses. This should be done every month if possible and not less than every three months.

The cost of operation in the clay industry varies a great deal according to road conditions, distances, frequency of use, and labor. The accompanying table shows the average annual cost of operating a four-ton motor truck, three hundred days a year on mileages of ten and fifteen thousand. These figures were included in an article entitled, "Motor Trucks in the Clay Products Business," which was read before the convention of the Canadian National Clay Products Association at Montreal on May 26. The cost of the chassis and body complete is given at \$6,000.

MOTOR TRUCK FINDS USEFUL APPLICATION

While much has already been written concerning the use of motor trucks for hauling clay from the pit to the plant, and for placing clay products on the job, both from the standpoint of economy of operation and the widening of a market, yet there is always something new and interesting in the experiences of various manufacturers who have found that motor trucks do pay a substantial dividend. Below is given quotations from letters received from users of motor trucks, all of whom are manufacturers in the clay products field.

1. We have had one motor truck in operation for two years at our plant. During that time it has been proved to us that the motor truck takes the place of four teams and saves time and labor in our deliveries. We have had very few repairs and figuring the cost of running a truck,



Small Trucks or Carts Loaded With Hollow Tile Placed Upon Motor Truck at Plant Ready To Be Conveyed to the Railway Freight Yards.



Motor Truck With Its Load of Carts Filled With Tile Pulling Up Alongside the Loading Platform in the Freight Yard.

it has saved us enough in one year to pay for itself. All of our product, which is hollow building tile and drain tile, is delivered by this one motor truck. Our deliveries amount to about fifty tons daily and with the help of another truck as good as the one we have now, we will be able



A Motor Truck Which Has Been in Daily Service on a Clay Plant Since September, 1913, and Has Supplanted Eight Horses.

to double our output and deliver more of our product to nearby towns.

	10,000	15,000
	Miles	Miles
Investment	\$6,000	
Less cost of tires	450	
	Miles	Miles
Interest on \$5,550 at 7%.....	\$ 388.50	\$ 388.50
Depreciation on \$5550 at 15 %.....	832.50	832.50
Insurance—Fire, Theft, Collision.....	187.50	187.50
License	40.00	40.00
Tires at 5 cents per mile (Set cost \$450 and guaranteed 9,000 miles).....	500.00	750.00
Gasoline at 8 miles to gallon	412.50	618.75
Oil at 200 miles to gallon	25.00	37.50
Grease	6.50	9.50
Rent	96.00	96.00
Maintenance	275.00	350.00
Wages of Operator, \$4 per day	1,200.00	1,200.00
	\$3,963.50	\$4,510.25
Total cost per day	\$ 13.21	\$ 15.03

Altho the following data is not contained in the above letter, *Brick and Clay Record* feels that it is well worth while pointing out how this particular truck has been used to unusual advantage. The plant of the above concern is far removed from a railroad spur and hence out of town shipments were difficult to accomplish. The tile are placed upon trucks, three of which can be rolled upon the platform of the motor truck and anchored and the truck then run over to the freight platform where the small trucks are removed and pushed directly into the freight cars and unloaded. While the motor truck is busy traveling between the freight platform and the plant, the small trucks are being loaded at the plant and unloaded at the freight cars. In this manner everyone is kept continually busy and the motor truck facilitates greatly the shipment of tile to outside points. The use of these small trucks is illustrated in one of the accompanying photographs.

2. We have been working two one-ton trucks; three, three and one-half ton trucks and an autocar for hauling

coal to kilns. These trucks are giving excellent satisfaction and altho we have not kept an accurate check in comparison with team hauling, we are disposing of our teams and plan to use trucks only.

Our three plants are located within a radius of twelve miles and these trucks enable us to haul supplies and transport labor when necessary to our various plants. Work of this kind could not be accomplished satisfactorily with teams.

TRUCK SATISFACTORY BUT REPAIRS HIGH

3. We own two trucks of a certain type but do not believe we will purchase a third. They are too high grade a machine to put in the hands of brick yard men. No matter how good your chauffeur is he stands alone. Of course, brick delivery is a good deal cheaper by truck than by horses if you have a long run, but on short runs, horses are the cheapest. The one great advantage, even tho it did cost more to use a truck than horses, is that there are less irresponsible men to bother with, for you probably realize that there are no men in this world so hard to handle as teamsters.

A five ton truck, hauling 2,500 brick, delivers as much as four teams of horses. Of course, the advantage is that when there is nothing to do there is only one man loafing. The same is true in hauling wood. A truck is sent into the woods and it carries about four and one-eighth gross of wood, making two loads a day, which is as much as four pairs of horses could do.

Do not mistake me now, about the value of this particular truck. It is a high class machine but it is too expensive to maintain. It does the work and you can load it up all you like, but you don't dare to put it in the shop to be repaired because its expense is too great.

4. During our busy season we use from six to eight, five-ton trucks and find that they have worked out very well in solving the delivery problem. They have enabled us to give quicker service and have increased the radius of delivery. We do not own these trucks but hire them on contract as we find this works out best. We have not re-

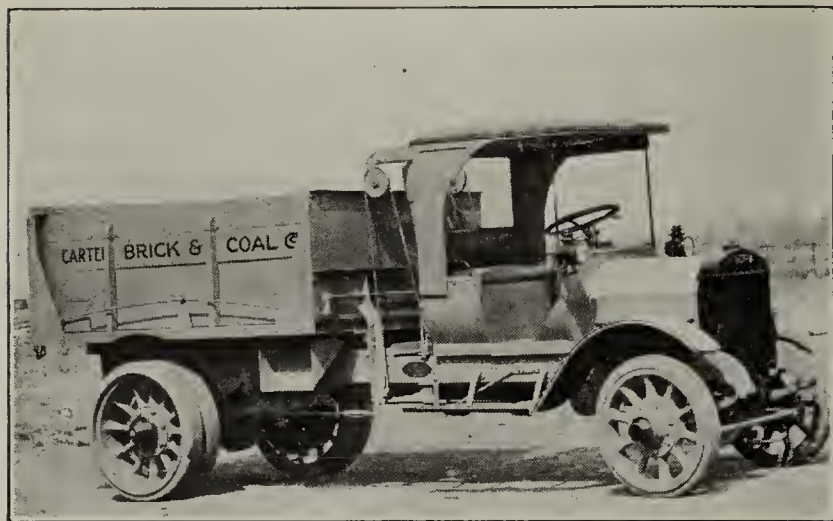


Hauling Clay From the Pit Is One of the Good Uses to Which the Motor Truck Has Found Application on the Clay Plant.

placed all our horse and wagon equipment altho that has been cut down to practically a minimum as we are only using a few teams for the delivery of small lots and very short hauls. We have not found it a paying proposition to use trucks unless the haul is over a mile and one-half.

These are the conditions that exist in this market and may not apply elsewhere.

5. We have one five-ton truck which we have operated for two seasons with considerable grief. We do not say this to knock the particular type of truck we use as we feel that to a large extent the troubles were due to incompetent drivers who abused the truck. We also feel we made a mistake in getting too large a truck for our conditions as we find we are unable to use our truck on so



The Owner of the Above Truck Believes That With Better Drivers He Will Get Better Service From His Truck—a Handicap Which Was Experienced Last Year.

many building jobs. We have never kept any accurate record of our operating cost but know that it costs us more for motor truck than for team delivery. We hope to have better results this season for we believe we will be able to get better drivers.

USES TRUCK FOR HAULING RAW CLAY

6. Our operating conditions are not the best on account of bad roads and we are therefore limited to the summer months and the early fall months. On account of this we must use horse and wagon delivery the other months of the year.

The product we haul in our truck is coal and stoneware clay. Both products are mined in the hills close to the city and are generally in a rather inaccessible place which makes truck operation extremely hard. Our truck is of five-ton capacity and we generally load it up to capacity.

The truck has been in operation since August, 1917, and during the months it could be operated it has given entire satisfaction. We have had to make some repairs on the truck but it is our opinion that with good drivers and good roads they could be cut down to almost nothing. The cost of operation, that is, gasoline, oil and tires, is high. This is probably due to faulty roads, long hill climbs, etc. We have no way of judging the ability of the motor truck to operate in a wider area than a horse and wagon. We have never had to use the truck except in places where we formerly used the horse and wagon. We have no doubt that with good roads we could operate the truck over a much larger area than with our teams. We have never kept any operating record of the truck for any month and therefore cannot furnish data on that item. However, we believe that trucks could replace horses and wagons provided we had better roads so that they could be used the year round and with this we could cut our repair bills, gasoline, oil and tire costs so that they could be operated more efficiently and more economically than horse and wagon.

THIS TRUCK DOES THE WORK OF FIVE TEAMS

7. We purchased a five-ton truck about one year ago and we have been operating it practically all the time since its purchase, using it mostly for hauling clay. We are

hauling a little better than five tons each trip and are making on an average of eight trips per day, making a total of forty tons daily. The distance from our factory to the mines is five and one-half miles for the round trip. We have not been keeping an accurate cost account and are unable to give much information as to anything near like the exact cost per mile or ton.

We also have a three ton truck which we operate under practically the same conditions and we are perfectly satisfied with the results obtained in the operation of the trucks and find that the five-ton truck will easily accomplish as much each day as five teams under the same working conditions. We have not as yet done away with all of our teams and do not think we ever shall as we have work in connection with our business such as stripping clay and that cannot be done by trucks. However, on a straight out and out hauling proposition we are satisfied that the proper way to do it is by trucks, provided the roads are suitable.

8. We have one truck which we have had in daily service since September, 1913. Before we purchased the truck—which has a one and one-half ton capacity but which we load to over 4,200 pounds—we had eight horses, now we do not have any horses. We sold six of them at once, but kept two, and our records for 1914 showed that the cost of operating a truck, plus the cost of the two horses, was less than the expense of using the eight horses.

Most of our goods is hauled to Philadelphia—an average hauling of about forty miles round trip—and in our rush seasons we have made three round trips a day. Since buying a truck we have delivered to points forty-five miles distant, which was impossible with the horses.

The gasoline consumption for the five years which we have been operating the truck has averaged seven and three-quarters miles to the gallon; we consider this very good. We believe for age and service that our truck holds the record. It has been well taken care of and never abused. We have just had it thoroly overhauled and we think it will serve us for some time to come.



New Law in Ohio to Help Roads Building

A gathering of all of the field men of the Ohio Paving Brick Manufacturers' Association was held at the headquarters in Columbus, August 18, when conditions were discussed and work for the coming year was outlined. Reports show that there is considerable activity over the territory covered by the association, which includes Ohio, Michigan and West Virginia. With the new law on road work taking effect August 28, the cause of improved roads in Ohio will be given a marked impetus. The new law provides for a levy of .5 of a mill on the state duplicate instead of .3 mills which has been the law. This will mean that \$4,000,000 of state funds will be available next year. When this is administered the counties have to put up an equal amount and in many cases the proportion of the counties is more than 50 per cent. Coupled with the federal aid, which will amount to more than \$500,000 next year it is believed that contracts for road improvement amounting to about \$20,000,000 will be let in Ohio next year. So far this year the Ohio Highway Department has awarded more than \$6,000,000 worth of work and there is much more to be awarded.



Russia's Building Industry is Undeveloped

A. A. Zakharoff has written an interesting article in the summer issue of the magazine called "Russia" on the subject of "Better Homes for Russia's Peasants."

Taking up the subject of building materials he states that there are many deposits of clay for the production of ceramic ware, but that this industry is in the incipient stage and cannot satisfy the demand of the domestic market.

According to statistics he gives, there are in Russia 221 glass factories with a production valued at 25,354 rubles; porcelain and whiteware, 40 factories, with a production valued at 8,604 rubles; ceramic ware, 166 factories, with a production valued at 5,991 rubles; cement, 46 factories, with a production valued at 14,294 rubles; gypsum, plaster of Paris, and lime, 101 factories, with a production valued at 2,439; and 946 brick factories with an annual production in value of 80,571 rubles. A Russian ruble was formerly worth 51.5 cents.

These figures demonstrate the insignificance of the Russian building material production in proportion to the territory and population of the country. A comparison with the statistical data of the United States reveals the relative infancy of the Russian industry; for instance, the production of cement in the United States equals \$80,533,203, in Russia, 14,294,000 rubles; gypsum, plaster of Paris, lime, \$20,143,663 in the United States; in Russia, 2,439,000 rubles.

Mr. Zakharoff is preparing an illustrative book in the Russian language descriptive of modern low cost houses and workingmen's homes in America for distribution in Russia.



Brick Men Inspect National Highway in Ohio

Example of the progress made by the National Paving Brick Manufacturers Association toward improvement of the National Highway with brick material was graphically demonstrated to members of the Advisory Board of that organization following its meeting in Columbus on August 11. A party of eight from this group inspected the highway from Columbus to Wheeling, W. Va. The chief significance of the trip was the contrast in the condition of the road today with what it was six years ago when the improvement was begun.

The brick improvement of the road at present covers 70 miles of brick pavement, between Zanesville and Wheeling. Between Zanesville and Columbus it is still largely concrete and macadam. The improved stretch was begun last autumn, and with the exception of two small villages, which were low in finance, is unbroken. These unimproved stretches will be improved soon also, the tourists have learned.

"The brick pavement we found to be in excellent con-

dition, and not only is it holding up satisfactorily, but this stretch now is considered the longest and most comfortable ride to be found anywhere in the United States," says Will P. Blair, vice-president of the National Paving Brick Manufacturers Association, who was a member of the party.

"Added to the comfort made possible by this pavement, is the wonderful scenery enroute. From a picturesque point of view our party considered the trip could not be duplicated. Many curious bridges were noted along the road. Incongruity seemed to be the chief aim of the builders of these bridges. They have been built of stones, and possess bay windows, alcoves, ledges and other appurtenances. One we saw has the appearance of an old fort, with buttresses and pinions. According to legends we picked up on this trip, it appears that these bridges were built when the National Highway was first projected in 1829. These legends have it that the designers sought to incorporate in their bridges the spirit of the hills and the atmosphere of the country.

"Of particular interest to the inspectors, however, is the fact that during the war the army trucks of the nation passed over this new brick road, and altho this was a severe strain upon the road, not a particle of injury is noticeable."

This road was first proposed to extend from Cumberland, Md., to Jefferson City, Mo. First work on it was for 30 miles west of Indianapolis, and this section received the first "brick" pavement, two inch white oak planks. Mr. Blair remembers the days back in the late sixties when mule and horse teams traveled in continuous stream, with noses to backs of wagons, for weeks at a time. It was the great rush of immigrants to western farm lands after the Civil War.

The improvement with brick surfacing of the present day, however, has solely a utilitarian value and is not inspired solely by the desire to monumentalize the past.



A Correction

The Didier-March continuous railroad tunnel kiln is guaranteed by its manufacturers to produce large savings in the course of a year, but even they will not back up the statement appearing in their advertisement in the August 12 issue.

The copy as furnished the printer read: "An annual saving of \$45,000.00 on every 5,000,000 9-in. equivalent burned." Thru a typographical error this was made to read a saving of \$45,000,000.00 per year.



One of the Peculiarly Constructed Bridges Noticed by the Members of the N. P. B. M. A. on Their Recent Inspection Tour Over the National Highway in Ohio.

INCREASING HAULAGE CAPACITY *with* TRAILERS

Illustrating How Trailers Can be Applied to Clay Products Delivery and Including Examples of Their Successful Application

THE USE OF TRAILERS for facilitating clay products delivery dates back almost as far as the time when motor trucks first came into use in this industry. However, the number of users of trailers in the clay industry is still very small, altho within the last few years this vehicle has come into greater prominence as a new agency in highway transportation.

There is hardly a line of business requiring hauling or delivery to which the trailer could not be applied with advantage, whether the material hauled is light and in many small pieces, or is heavy, bulky and in a single or few pieces. There are trailers and semi-trailers in all styles, both two-wheeled and four-wheeled, in all capacities from a few hundred pounds up to ten tons or more. The trailer makes it possible, under favorable conditions, to utilize surplus or reserve power of the motor truck in a way to reduce the cost of transportation without increasing the size and weight of the individual unit. Thus, the truck owner is able to do its hauling or delivery work at a lower cost per ton mile without any resulting greater wear or tear on the highway.

MOTOR TRUCK HAS SUFFICIENT RESERVE POWER

On a hard fairly level road any motor truck has power enough to haul at least one trailer carrying a load equal to a capacity load on the truck itself. This is possible because every motor truck is powered and geared to carry its maximum rated load up grades of twenty per cent. or more on poor roads. In operating on hard surfaced roads and slight gradients, all of its power is not required, but can be utilized for drawing one or more trailers.

By utilizing this reserve power to pull a trailer, the work-

ing capacity of the truck is doubled. There is, however, a resulting increase in the gasoline and oil consumption and other operating expenses. While this increase in cost of operation varies with conditions, it has been found to be about twenty per cent. in normal service, so that the load on the trailer is hauled by the saving of about eighty per cent., as compared with hauling the same load on the motor truck. The principle savings in trailer operating expenses are that an extra driver is not needed, interest on investment is very low, consumption of fuel and oil per ton haul is only a fraction of that of a truck operating alone, depreciation of the trailer and increased depreciation of the truck is relatively small, while wear of the trailer tires and increased wear of the truck tires is low per ton.

It is important to bear in mind that the trailer takes care of the overload. It is ruinous to the motor truck to be overloaded frequently, and it makes the cost of operation excessive if an unnecessarily large truck is used one-half the time or more, hauling less than capacity loads merely to be available for hauling the larger loads perhaps once a day or even once a week. It is far more economical to use a smaller truck for the ordinary loads and provide a trailer to handle the excess loads when necessary.

A SUCCESSFUL APPLICATION OF TRAILERS

The Washington (D. C.) Brick & Terra Cotta Co. have used several trailers in connection with their motor trucks for a number of years. The use of this equipment has been found to enable the above concern to cut down delivery costs to a remarkable extent. One of their trucks carries three and one-half tons of material, while two tons may be loaded into the trailer. With this outfit, the company is



The Use of Several Units of Trucks and Trailers of the Type Such As Is Illustrated Above Has Enabled the Washington (D. C.) Brick & Terra Cotta Co. to Save Considerably on Its Delivery Costs.

hauling from 10,000 to 12,500 brick per day, whereas one team can haul only 1,600 brick daily.

Recently a test was made by the Hydraulic-Press Brick



This View Shows the Use of a Truck and Trailer Unit on Another Clay Products Plant.

Co. in Chicago using a semi-trailer for hauling brick. When this outfit called at the company's yard at 1400 Kilbourn Street at 1 p. m., May 2, 1,000 brick had been loaded on a horse-drawn wagon to be hauled to Rogers Park, slightly more than fifteen miles. The team was expected to make this trip and return to the company's yard at 1300 Altgeld Street, some time that evening. The following morning it was to have been loaded with 600 brick and returned to the west yard about noon, where 550 additional brick were to be loaded and deliveries made at 14th Street and 36th and 57th Courts. These jobs, therefore, meant one and one-half days work for the team.

Instead, the load of 1,000 brick was transferred in half an hour to the trailer and unloaded in Rogers Park by 2:40 p. m. and the truck and trailer arrived at the north yard on Altgeld Street at 3:10. Here 800 brick and 100 pounds of mortar color were taken on and the outfit reached the yards at 4:13. There 500 additional brick were put on, making a total load of 8,540 pounds. The load was hauled to 56th Court and 14th Street, and deliveries completed at 5:10, the truck and trailer then returning to the Kilbourn Street yard, having completed in about four hours the deliveries that would have taken the team a day and one-half. The total mileage was 36 miles, and the fuel consumption four and one-fourth gallons of gasoline.

GOOD SPEED IN DELIVERIES ATTAINED

On smooth pavement beyond the city limits a speed of thirty miles an hour was attained with the load of more than three tons, including weight of trailer. No chipping of the brick resulted, owing to the easy action of the truck and trailer springs.

A similar demonstration was made on May 7, including a run to River Forest with 1,000 brick. From 10:22 a. m. to 4:02 p. m. 2,650 brick were hauled and 56.6 miles were covered, with a fuel consumption of five and one-half gallons.

The following day a load of 1,000 brick was hauled from 12th Street and Michigan Avenue to River Forest in fifty minutes and 1,250 enameled brick from the Altgeld Street yard to 53rd Street and Sawyer Avenue on the South Side in forty-five minutes. The latter trip covered twelve miles thru slow moving traffic. There was no chipping of the fragile enameled brick, altho a similar trip with the unsprung horse-drawn wagon showed twenty-two per cent. loss from chipping.

On May 9 the semi-trailer ran thirty-two miles to Naper-

ville, took on 1,530 brick weighing 9,562 pounds from a freight car and hauled them to Lyle, four miles, in the forenoon. In the afternoon it hauled 6,780 brick from Naperville to Lyle, as against a team haul of 2,000 for the full day, and returned to 12th Street and Michigan Avenue, Chicago, at 7:30 p. m. Mileage for the day was one hundred and two miles and gasoline consumption ten gallons. There are some heavy hills between Naperville and Lyle, but the four-mile trips were made in approximately fifteen minutes.

The demonstration with the single trailer was sufficient to show remarkable efficiency but if the more economical method of employing three trailers with the truck had been followed the whole car load of 16,000 brick would have been moved in the afternoon. By this method the loading and unloading time would have been saved to the truck. While the truck was in transit with one trailer, another would be loading at the car and the third unloading at the other end of the route.

* * *

S. W. Straus Talks on Building

Propaganda for still further increases in building activities are still under way in San Francisco and other cities of the Pacific Coast. At every turn, the public is being told of the necessity for all types of buildings, both commercial and residential. In commenting on the present situation, S. W. Straus of the S. W. Straus Co. made the following remarks:

"Almost one-half of the 1919 building season lies ahead of us and there is time for much good to be done toward relieving the housing shortage. In New York City, the figures in regard to this condition indicate a need for one-half billion dollars worth of new buildings, in addition to alterations, etc. In a somewhat less acute extent, the same conditions prevail in all important American cities including San Francisco, and the coming winter will witness much suffering unless an immense amount of building work is done during the ensuing months. There is no fundamental reason why anyone should postpone building operations at this time. Much harm has been done in the past thru belief that prices might come down. However, we have seen a steady advance in all commodities and there is nothing to indicate a change in these tendencies. In all likelihood, the longer the delay in starting building operations, the greater will be the cost of the enterprise. The conditions which will keep prices on a steady upward scale may be epitomized as follows: First—Continued upward tendency of all labor costs. Second—Demand of laborers for shorter working hours. Third—Shortage of unskilled labor due to restricted immigration and in increased emigration. Fourth—Unprecedented shortage of all types of buildings. Fifth—Vast amount of public works needed by the Federal Government and various states and municipalities. Sixth—Restricted output of building materials owing to labor troubles and transportation limitations. Seventh—Continued upward trend in the prices of all commodities. Eighth—Tendency toward better living conditions by the masses of the people.

"What is needed right now more than anything else is mental stabilization or a complete understanding by all interests that building costs are not coming down, but that they are steadily going higher. Holding off at this time marks a definite loss in view of increasing costs, while to build now means a continued and rapid enhancement of one's investment provided it is made under proper conditions. With the present shortage of houses, it is not likely that conditions of normality can be restored for several years. A tremendous amount of industrial expansion is necessary here on the Pacific Coast as well as other por-

tions of the country, in order to meet new business conditions, which will absorb capital, labor and building material. We are bound to develop our resources more in the

next ten years than ever before in our history. We are also getting ready for an export business such as we never dreamed of in ante-bellum days."



LABOR CONDITIONS MAY BRING ABOUT COMPLETE TIE-UP *in* NEW YORK BUILDING

"SNOWBALLING," or successive wage advances to organized union labor in the building trades of New York will cease, if the efforts of members of the Building Trades Employers Association bear fruit, according to The Dow Service Daily Building Reports of August 18.

This new issue in the building problem as it now presents itself symbolizes in the language of the trade the frequently recurring demands for wage increases among building artisans. It reflects the tendency among the workers to force a new high level of wages for a given trade and then tie up construction work while another trade reopens its former successful demand for wage advance. Like a ball of snow, increasing in size as it rolls along until it bursts, so the employers of the building trades visualize the breaking point in all building construction work unless heroic measures are taken to stabilize building trades wages at least until the expiration of existing wage agreements.

With such an object in view a conference has been arranged for at which time the associated building material dealers of New York will listen to a proposal to close down their yards indefinitely. Extreme action of this sort occurred once before and the building business in all its branches came to a dead halt.

BRICKLAYERS DEMANDED ANOTHER INCREASE

This decision was forced as a result of the determination of the brick layers to walk out recently. They had demanded \$10 a day, the employers offering \$8, which would have been the second readjustment in wage rates for this particular trade since the present agreement, expiring January 1, became effective; the original scale called for \$7.50 a day. The mason material dealers, hearing of the proposed request at the week-end went into executive session. Some of them pointed out that speculative building work now being rushed to completion to meet, in part, at least, the great demand for housing that is certain to eventuate in the autumn would have to stop and they looked with considerable uneasiness upon the fortunes of those who have invested large sums on scanty margins on such building projects.

As intimated in this column recently, the parting point between the building trades worker and his job is near at hand. There has been considerable falling off in actual building construction, even the volume of contemplated work showing considerable reaction, partly from the uncertainty regarding the rates of wages prevailing and partly due to the stimulus given to the popular imagination that, in the light of investigations into certain building material producing industries, the price of various commodities were at last destined to fall.

One thing is generally recognized regarding the building material price situation: that in the face of demand that will pay \$9.25 a thousand to obtain ordinary spruce lath when the market is only \$8.50, or more than 100 per cent. above its normal price level, merely to obtain the commodity when the market is greatly under-supplied, no power exists that can force prices to pre-war or even to post-armistice levels.

The foregoing illustration applies to a great number of building materials and commodities. In the case of Hudson common brick new towing rates, shattering the 100 year-old free-lighterage traditions, have added an extra twenty-five cents to the delivered price of this material, but the manufacturers are holding firmly to the old price of \$15 a thousand, wholesale, with the usual additional cost for haulage and handling. In some cases the increases show a 300 per cent. advance over former towage.

CONDITIONS STILL REMAIN GREATLY UNSETTLED

A new menace is looming up before the building material consumer. He realizes that greater production alone will quickest bring lower prices. But before there can be greater production there must be more labor saving machinery, better and more adequate transportation and handling facilities. Abnormal trading in the stock exchange of late shows that industrials representing factors making for lower construction costs have not been the favorites. With the country still forty-six per cent. under-constructed and New York still short a third of the number of structures it now actually needs, industrials normally would attract a heavy part of these investment funds when the Wall Street bubble breaks. Building material stands high in the list of such industries.

But with the further unsettling of these industries by allegations disturbing to confidence and requiring many years before actions can be brought to a deciding conclusion, building material interests who, during the war, submitted their costs to the Federal War Industries and similar boards, believe that great barriers are being raised against alleviating the housing and commercial space shortage at the quickest possible moment by falsely giving the impression to prospective builders that prices are going to fall and that they would do well to wait for lower levels.

Building material prices are high today mainly because labor has been granted almost every increase it has asked for since this country went to war. The element of supply and demand has hardly appeared in price inflations. In fact many mills have been hungry for business up to the present time. When the country's building movement gets fairly under way and the capacity of the country's building material producing plants becomes fairly absorbed, even at the 40 to 60 per cent. of capacity at which they will be able to operate because of unskilled labor dearth, new costs must be added to the materials put into new or altered buildings even above those now represented by the higher cost of skilled labor.



Governor Sproul of Pennsylvania has signed a bill passed by the recent Legislature, regulating the practice of architecture in the state, and limiting the indiscriminate use of the title of "architect." The new law provides for a state system of examination and license of architects under a state board of five examiners to be appointed by the Governor. Persons applying for examination or certificate and registration will be required to pay a fee of \$25.00.

HOW APPRAISALS AID *in* KEEPING PROPER COSTS

Changing Values of Materials and Equipment Necessitate Appraisals Being Made to Have Proper Plant Valuation and to Insure Complete Cost Accounting

By William F. Worcester

*Vice-President, Rau Appraisal Co., Milwaukee. Read at
the American Concrete Pipe Association Convention*

EXACTITUDE IN COSTS is a wonderful thing, to know where you stand at all times and in all respects. One point of exactitude the average plant misses is that of accurate building, machinery, and equipment values. You can be very accurate on your stock, on your clay, on your labor, on every item where you immediately pay out or where you immediately take in money. But you own buildings, you own machinery and equipment, and exactitude should be just as necessary on plant values as it is on your labor and on your expenditures.

Suppose a plant originally cost a certain sum of money and has been from year to year depreciated on your books until it stands at, to exemplify, \$100,000, in round numbers. Your cost system, or any cost system must regard the plant value as one of its fundamentals. You must charge interest on investment, an important portion of which is in your plant value. Suppose you charge, we will say, 6 per cent. on investment. Your investment, as it stands on your books, is \$100,000 according to the illustration, and accordingly \$6,000 would represent the interest on this investment. Suppose a true valuation of the plant was ascertained by an appraisal to be \$200,000, due to the present high prices of materials, construction and machinery. Interest on investment on this basis would be \$12,000, a considerable difference.

DEPRECIATION

The question of depreciation is very important and the method ordinarily in use is to figure so much per year. In time this will reduce plant values almost to the vanishing point and yet there remains the buildings, machinery and equipment, partly due to your careful management, to your repairs, your upkeep, your handling, doing the work just as well, comparatively speaking, as would a new plant. How do you explain that? On your books you carry very little value, due to this per annum depreciation method and yet there is the property. If it is desired to make any presentation of the value of that property, the only documentary evidence you possess is the heavily depreciated book valuation, which you, in your own mind, know is not correct.

Plants differ in management, machinery differs in its handling and in the time and money spent on its maintenance and upkeep as well as in the character of work done. Buildings do not necessarily depreciate so much per year, and if you consider a per annum depreciation on buildings you are figuring the most the first year when the real depreciation is the least. A well constructed building does not depreciate as much, or as rapidly, as a poorly or cheaply constructed building. It is a question of actual deterioration,

in other words, the condition of the property which should be considered rather than age.

REAL DEPRECIATION METHOD

Regularly constituted appraisal companies consider four factors in the figuring of depreciation, the first and most important being "Condition," as previously stated. The second factor is "Type." This is especially applicable in machinery where type (or obsolescence) is sometimes an important consideration. Even in a year the type of machinery may change in a certain line of business and a machine of the old type has heavily depreciated for a reason not even remotely due to age. Certified appraisal depreciation method considers "Age" as one of the secondary factors in depreciation. Machines do not die as do human beings and therefore "average life" is not as truly ascertainable.

The fourth factor is "Ultimate Salvage." Whatever the junk or scrap value is, it is no more on a new machine than on a used machine and therefore does not depreciate. Whatever percentage of the value of a machine is represented on the ultimate salvage does not enter into the question of depreciation, being conducted before depreciation is figured. By the consideration of these four factors in the figuring (and not merely by age alone) a depreciation is obtained which is based on sound inspection, actual condition value and is disinterestedly applied.

ACCOUNTANCY APPROVES APPRAISAL

If you do not provide yourselves with an appraisal the only thing the accountant can possibly do is to figure so much per year. There is no accountant of experience, capability and broad understanding but will approve very highly the having of an appraisal of the plant, based on accurate descriptions, measurements, details obtained on the property by men of competence and experience in this line of work, appraisers thoroly familiar with all grades of construction, machinery and equipment, and capable in the description of property.

In regularly constituted appraisal work the appraisers on the property do not place the values thereon. The men are merely description and depreciation experts. The valuations are entered in the office of the appraisal company from authentic and provable sources. This may seem strange, at first consideration, but the entire appraisal system is predicated on the idea of obtaining descriptions of a property, and of each detail of that property, so complete and accurate, so minute and comprehensive, that it is visualized apart from the items and appearance. In other words, if

there is a fire destroying that property, the appraisal descriptions completely identify.

PROVABLE PRICING

The pricing experts take these descriptions, as obtained by the appraiser on the property, the sketches, field notes complete for each building, and for each machine, the pipes and fittings, lights and wiring, office furniture and fixtures, benches, tools, everything you have, under the proper classification and arrangement. Correct prices are applied, for the locality, the prices prevailing at the time of the appraisal, or at any time desired. Prices are on file in regularly established appraisal companies for whatever place or date, and can be figured as of a plant intact back to Feb. 28, 1913, which is very important, as any tax expert will tell you. The entire pricing summarization and preparation is done in the office of the appraisal company, merely the details being obtained at the plant.

We will take the previous illustration of a property carried at \$100,000 on the books and consider that \$10,000 has been made in actual profit. Comparing this with your plant value it looks like 10 per cent. on the plant investment, which does not sound bad, over and above all expenses. Suppose the real sound value of that plant as ascertained by appraisal is \$200,000, at present prices. Your \$10,000 profit has dwindled to 5 per cent. of actual plant value, which does not sound so good. The real value of a plant in its actual condition as it stands today, on present prices of material, labor and equipment, should be the basis on which you figure your investment for cost system use, accountancy and all along the lines.

ACCOUNTANCY USE OF APPRAISAL

We have considered appraisal in connection with interest on investment, comparison of profit, and depreciation and now turn our attention to the accountancy use of appraisal. Some of the best accountants advise, and I believe that it is quite generally the method followed—the setting up of the plant value on your books, after having an appraisal, on the basis of the sound present condition value of the property as it obtains today.

In this case the usual method is to deduct the old plant value from the sound appraisal values and the difference set up in reserve for depreciation. It is not claimed that appraisal values at the present time are absolutely immutable or unchangeable from year to year. Prices fluctuate. Next year, or even sooner, prices may change somewhat on construction, labor, machinery and other values. In that event, if there is a change, there is merely the necessity of refiguring.

If you have put up new buildings or made changes in machinery or otherwise, there must be necessarily what we style a revision, but if the plant remains unchanged, there need never be a re-measuring and re-describing of the property. Institute new prices a year later, two years or five years later and you are safe on your values once more.

Then we advocate instead of deducting 10 per cent., or any per cent. per annum, that you do not deduct anything, but instead—that amount which would approximate the deduction, considered proper, and which is devised as the correct amount to allow for depreciation—instead of deducting that amount, add it to your reserve for depreciation, allowing your plant value to remain approximately the same. By this means reserve for depreciation will take care of anything along that line until such time as you may desire to have your appraisal revised or refigured once more to strengthen out your plant value. This is quite generally the method followed by concerns who have appraisal and desire that appraisal rewritten on their books.

LOW BOOK VALUES

Some establishments prefer to hold their plant values down on their books. They think that thereby they are not fooling themselves. It may be that they are "fooling themselves" just as badly or perhaps worse to have plant values extremely low. Is it not best to have valuations fairly represented, if it is a profitable basis, especially on a disinterested valuation? It is a psychological fact that it is always more easy for the owners, in presentation of values to be willing to reduce the figures somewhat than it is to attempt to argue an increase.

In the event of a fire loss adjustment, in making statements to banks, to mercantile agencies, to stock holders, along the line of credit, purchase, sale, reorganization, increase of capital stock, are a few of the many instances where a presentation of the plant values is very important. The owners seldom will receive credit for an undervaluation. Book valuations will generally be considered as being high. You are better prepared for any contingency with a proper plant valuation.

INSURANCE VALUATION

An unsatisfactory fire loss adjustment would be a very costly matter and therefore we may properly introduce correct insurable values as being a necessary element in the consideration of costs. Possibly three out of five concerns now use what is known as the co-insurance clause on their insurance policy, thereby securing a reduction in their insurance rate. Nothing more fair has ever been devised than the co-insurance clause, both to the insured and to the companies, but it presupposes, on the part of the owner, an accurate knowledge as to the valuation of the property.

Under the 80 per cent. co-insurance clause you agree to insure up to that per cent. of the actual cash value. What is the actual cash value of the property? Is it the original cost of that property with so much deducted per year for depreciation? It is not and you would find that it was not if you had a fire loss. At the present time prices are higher than they have been for years. If you have taken your original costs as the basis and deduct so much off per year, and figured the 80 per cent. clause on that, you are wrong. Today prices of building material and labor, machinery costs and other plant values—less a proper amount for depreciation should be the basis of the co-insurance clause.

The one point where there have been unsatisfactory adjustments with a co-insurance clause, is where there is under insurance—in other words, an undervaluation of the property, and then a partial loss. If you have carried 80 per cent. of a too low value and it proves to be only 50 per cent. of your real value, you will receive only five-eighths of your adjustment on a partial loss. Look into this matter carefully and decide to protect your plant with an appraisal in order that your insurance may be properly placed and distributed as the 80 per cent. co-insurance clause applies separately to each specific division of the insurance valuation.

Some business men have put off having an appraisal as they claim that today prevailing prices are abnormal. We protest this argument on the part of the plant owners. If you had a fire at the present time, present prices are what you would have to consider in rebuilding and present prices would be the basis on which you would like to receive the adjustment of a fire loss. Therefore, a valuation at the present time is extremely useful in placing your insurance on a right basis.

STANDARD APPRAISAL METHODS

It is important on this line of work that there is a regular systematic method followed. We separately show each unit, also the underground, unburnable portions, and the above

ground, insurable values, building by building, also the equipment of each building in detail and under proper summarization and arrangement. We do not install bookkeeping, make out reports, or institute a cost system. We are solely in the line of valuations of buildings, machinery and equipment. Our summaries and recapitulations may be arranged under such headings as to meet the requirements and be of maximum in accountancy and cost system, also with proper summaries for insurance purposes.

I cannot emphasize too strongly the importance of having appraisal service by a company in this line of work.

The comparative small expense is more than justified in having this service and it may prove in time of emergency, to be one of the best investments ever made. You will always be glad that you had an appraisal.

* * *

Proposes Federal Home Loan Banks

Hon. W. M. Calder, United States senator from New York, on August 8, made a vigorous plea before the United States senate for legislation establishing a system of Federal Home Loan Banks. His address was a great presentation of the home owning, home building problem in America; a careful review of construction costs and material prices, based on the most reliable data obtainable.

The Calder bill proposes a system of Federal Home Loan Banks thru which it can be possible for building and loan associations and other agencies as approved by the federal home loan board, to discount first real estate mortgage thereby raising more money for loans to home builders and buyers. If the building and loan interests of the country are the only ones to avail themselves of this facility, it would be possible to augment the available capital for home building approximately two billion dollars. This would not disturb the federal reserve system and would not require the Federal Government to "put up" money.

* * *

Imports of Clay and Burned Clay Wares

With a resumption of world trade under regular conditions and a general movement toward normal operations in this direction, import and export figures in the ceramic industry carry more interest and still greater significance than under the restricted activities of months now past.

From figures now available, the imports at the Port of New York during the month of June, for clay and burned clay wares, are shown to be as follows:

China clay: England, total 1,540 tons; valuation, \$18,725.

Other clay: England, 2,171 tons, valuation, \$20,582; and from Spain, 3 tons, with valuation of \$104.

The imports of plain china reached a total of \$12,591 in valuation, divided as follows: France, \$6,762; Germany, \$4,981; England, \$748; Austria, \$66; China, \$4; and Japan, \$30.

The imports of decorated china were: Germany, \$81,070; France, \$67,980; England, \$31,295; Japan, \$34,137; Austria, \$3,981; China, \$1,067; Denmark, \$364; Sweden, \$716; Bermuda, \$15; Canada, \$3; and Italy, \$20. Total, \$220,648.

Plain earthenware: England, \$4,300; Germany, \$1,146; and Japan, \$2,061. Total, \$7,507.

Decorated earthenware: England, \$116,183; Germany, \$10,849; France, \$336; Japan, \$4,231; Austria, \$168; Italy, \$322; Sweden, \$152; Denmark, \$58; and Canada, \$15. Total, \$132,314.

Other earthenware: England, \$7,969; Canada, \$464; and China, \$3. Total, \$8,436.

* * *

Clay Products on Stock Farm

Visitors to the Bluegrass section, surrounding Lexington, Ky., for several years past have been taken to Elmendorf farm, as one of the principal places of interest in the vicinity of the city. Elmendorf is the great stock breeding farm of the late John Ben Ali Haggin. It is on the Paris Pike, between Lexington and Paris, Ky., connected by interurban line with Lexington and the Bluegrass, and excellent roads. Several thousand acres were embraced in the original Elmendorf, which was the finest stock farm probably in the country, and the breeding place of blooded hogs, cattle, and Kentucky thorobred horses, which won noted races in all sections of the world.

The long strings of farm buildings are of brick construction, on stone foundations, and the roofs are of red terra cotta tile, floors being of concrete. No finer milk producing plant is to be found anywhere, and the visitor is at once struck with the type of construction used, especially on the main buildings out near the pike. Except for the silos, which are unmistakable, the plant would be taken for a country club.

* * *

It is interesting to note that the Rappahannock Valley Tile Drainage Corporation has been incorporated at Dogue, Va., by Allen Smith, and L. S. Smith of Dogue, and Edward P. Taylor of Comorn, Va. The object of the corporation is to furnish plans and specifications for the drainage of agricultural lands.



Were It Not for the Silos, Which Are Unmistakable, the Above Stock Building Would Quite Easily Be Taken for a Country Club. Clay Products Have Been Used Quite Profusely in Its Construction.

On the FIRING LINE

An Application of Standard Costs to the Firing of Kilns and Showing When Deviation from Standards Are a Result of Changes of Factors That Enter Into the Burning of Ware

By G. W. Greenwood

Treasurer, United Refractories Co., Uniontown, Pa.

“I AM REMINDED of a story,” remarked Barnes, shifting a chair so that it was in line with an electric fan and wilting into it. “A weeping child explained to a kind hearted lady that he had lost a cent. When she made good his loss, he burst out afresh, saying that if he hadn’t lost the first cent he would now have two cents instead of only one.”

“What’s the application?” asked the G. M. with amused interest.

“This. One may overlook a very real loss and weep over an imaginary one. I’m thinking it often happens in the brick industry.”

“Let me match your story with a true one,” said the G. M. “Last year a man received as back pay a round thousand dollars, all in fifty dollar bills. Passing out, he dropped one; and when some one called after him, he merely glanced over his shoulder, said he guessed it wasn’t his, and went on. So many other than brick men seem to give but a passing glance at a loss of fifty dollars.”

“Sure thing,” assented Barnes, leaning back while the breeze tossed his hair about. “Now if a man finds that a quarter has slipped thru a hole in his pocket, he concludes at once that he has lost twenty-five cents. He wouldn’t appreciate the explanation of an accounting friend to the effect that his average daily wages for the month had simply been reduced one cent a day as a result of the mishap. He rather thinks of a dozen things he could have bought with the money, and in imagination spends it many times over. Business men have in the past been hypnotized by accountants, like myself, into dividing something by something else, comparing the result with a corresponding result for the previous month, and with the same month last year and the year before, and with the total of all such items for the previous months of the current year; and even if one did have any sane ideas on the subject to start with, he is likely to lose them in the process.”

HOW CAPACITY AND LABOR AFFECT COST

“I certainly hope you are not accusing me of any sanity to start with when it comes to applying cost figures, Mr. Barnes,” said the G. M., smiling at Barnes’ embarrassment. “But as a *quid pro quo*, as my Latin teacher used to say, I’ll confess that many people feel towards figures the way they feel about mince pies. The more they know about how they are composed, the less respect they have for them.”

“I’ll plead guilty. Also, I’ll try to reform. I’ll try to make my mince pies—I mean mud pies—so they will be more digestible. For example, in dividing costs to the tenth of a cent one first reduces a gain or a loss to microscopical proportions and then hands the official a microscope with which to interpret the figures. For instance, take a case like this: A kiln is supposed to contain 100,000 nine inch brick, and

to be burned off in ten days, and the rate of wages for the kiln firemen totals \$8.00 per day; if now instead the kiln when fired contains but 90,000 nine inch brick, is burned off in eight and one-half days, and the wages paid amount to \$8.50 per day instead of \$8.00, what difference does it make in the labor cost per thousand for firing kilns?”

Picking up a fluttering scratch pad, the G. M. figured the following results:

First case:

Total labor cost	\$80.00
Cost per M based on 100,000 brick.....	.80

Second case:

Total labor cost.....	\$72.25
Cost per M based on 90,000 brick.....	.803

“I make a difference of about three-tenths of a cent a thousand,” he stated.

USE STANDARDS AS A MEANS OF COMPARISON

“And if one were to ask a busy superintendent why his firing cost had gone up three-tenths of a cent on the thousand, he would doubtless be annoyed at such a trivial question, and would point to the increase in wages as the quickest explanation. Now let’s try this instead,” reaching over and appropriating scratch pad and pencil, and working out the following analysis:

Standard Kiln Contents, No. 9 Kiln.....	100,000
Standard Burning Time.....	10 days
Standard Rate per day.....	\$8.00
Standard Firing Cost per M.....	.80

“Now by standards, we do not necessarily mean they must not be deviated from. They are like the lines assumed by surveyors in determining the area of a field. They take an east and west line, then a north and south line, and work out what they call latitudes and departures. So in the case of standards. One must allow for departures, and also for considerable latitude in meeting changing conditions.”

“Your standard is like the zero line on a thermometer. You can go above it or below it,” suggested the G. M.

“Yes. And that reminds me of the man who looked long and thoughtfully at a thermometer, finally saying, ‘Isn’t it wonderful how a little thing like that can control the weather?’ Just so, these standards are not supposed to control costs, but to form bases. Now look at this:

Standard Firing Cost, 90,000 at \$0.80 per M.....	\$72.00
Actual Firing Cost, 8½ days at \$8.50.....	72.25
Increase above Standard Cost.....	.25

This item of 25 cents he accounted for thus:

Increase due to increase in rate, 8½ days at \$0.50.....	\$ 4.25
Decrease due to burning time, 1½ at \$8.00.....	12.00
Increase due to decrease in kiln contents, 10,000 brick at \$0.80 per M.....	8.00
Net increase over Standard Cost.....	.25

"Now judged by standards, instead of a negligible item of three-tenths of a cent a thousand increase in the firing cost, there is apparently a blunt loss of \$8.00 due to the fact that for some reason or other a kiln which should have contained 100,000 nine inch equivalent, contained but 90,000. Presumably a full kiln would have been burned off just as quickly, with the same labor and fuel costs."

"There is another side to it," said the G. M., mentally saying good-by to his pencil as Barnes fished out his cherished Christmas present. "The kiln might contain shapes of such a character that they could not be set closely, involving a loss in kiln space. How would you handle such a case as this?"

"If this were an established fact," replied Barnes, cutting the ends off the hexagonal pencil so as to form three rhombuses, like the end of a honey comb cell with its remarkable mathematical properties, "then the extra cost of \$8.00 would be a charge against the nine inch equivalent of such space consuming shapes. For instance, if there were 40,000 of these, and they take up the space of 50,000 nine inch brick, then the extra \$8.00 would run up the firing cost of these shapes, twenty cents a thousand, making a total of \$1.00 per thousand for these shapes in addition to the extra fuel cost. In using standards, all such elements of relative cost bob up."

"In other words, instead of a chorus, you have a continuous performance of actors, each of whom has the entire stage to himself for the time being. His good points and his faults stand out prominently and alone."

"Yes," said Barnes, dumping the shavings into a waste paper basket. "Each transaction gets into the limelight by its lonesome."



New Jersey Pottery Output Value Increases

The Division of Geology and Waters, Department of Conservation and Development, New Jersey, has issued an advance statement covering pottery production in the state for the year past, showing that in valuation the material manufactured even exceeded the record-breaking year of 1917, and this notwithstanding the handicaps experienced in operation on account of the war. The figures are of decided interest in connection with anticipated production during the present year, for while the first half of 1919 was a little slow in certain branches of the industry, the balance of the year bids fair to be of astounding proportions.

The value of output in 1918 was \$12,570,842 as compared with \$12,535,843 in 1917; it is only as far back as 1915 that the total only attained \$8,049,338, but in a comparison of these figures advances in cost and prices must be considered, and the apparent great increase in volume is rather more apparent than actual; still the increase is there, and the increase is bound to continue.

The principal pottery commodity in the state, sanitary earthenware, shows a decrease in 1918 as compared with the previous year, the figures being \$6,151,752 and \$7,202,671, respectively, altho, on the other hand, the production in the year just passed was greater than at any time prior to 1916.

China, bone china, delft and belleek wares reached a total of \$1,563,181 in valuation in 1918, or slightly less than in 1917, when the production aggregated \$1,632,622; excepting for this year (1917), the highest rate of output in this branch of the business was attained in the past annual period.

During 1918, the production of electrical porcelain specialties exceeded the figures of the previous period, as might be anticipated due to the demands of the war, the totals being \$2,437,133 and \$1,893,382, respectively; in white wares, including C. C., white granite, semi-porcelain, and semi-vitreous porcelain, the increase in 1918 over 1917 is shown

by the figures \$1,239,069 and \$1,040,697, in the order noted. Chemical stoneware advanced from a valuation of \$472,681 in 1917 to \$745,741 in 1918. These increases in miscellaneous pottery productions more than offset the decreases in other branches, as noted, and with output maintained in these lines at this status during the present year, in company with normal output in the sanitary ware and china branches, the 1919 figures seem destined to be the greatest yet to be attained.



Don't Forget to Send in Your Suggestions

Since publishing the announcement of the \$50 Victory Loan Bond prize offered to the one who suggests the trade name selected by it as being most suitable for its use, the Los Angeles (Cal.) Pressed Brick Co., have made the following comment:

"Our idea is not so much to get a word descriptive only of some rough texture brick, such as the majority of those listed in each issue of *Brick and Clay Record*, but to get some more or less descriptive word of wider application, as for example, 'Hy-Tex' or the word 'Natco' which could be applied to a number of different products.

"It is our opinion that the different words coined for rough texture is far over done. A few of them are good, namely, 'Tapestry' and 'Rug' and several others, while the rest are more or less unknown, except to the manufacturer. It is our hope that among the suggestions there will be some which may be used in a broad way."

The announcement to which this item refers is that which appeared on page 206 of the July 29 issue of *Brick and Clay Record*. Those who failed to read this page are urged to dig up the above number and send in a trade name suggestion which may win for them the \$50 Victory Loan Bond. Remember, all suggestions must be in the hands of *Brick and Clay Record* by September 30.



All Eyes Focused On National Conference to Be Held in Chicago

The sessions of the National Conference to be held at the Congress Hotel in Chicago, September 8 and 9, under the auspices of the Illinois Manufacturers' Association, will be given over to the discussion of vital problems in business, multiplied by post-war and industrial developments.

Trade and industrial associations in every line of business have been invited to appoint delegates, and to participate in what is believed will be a meeting of moment, inasmuch as it will enable business to present concretely its attitude on some of the questions now before the law-makers at Washington, and some of the proposals of a revolutionary nature that have been presented from various sources in the past few months.

Not only business but farming interests will have representation at this conference, since it is pointed out that agriculture, after all, is one of the greatest businesses in the country. The farmer has his capital invested in land, he is an employer of labor, and he is concerned in the maintenance of conditions that will permit him to obtain a fair return upon his investment and his management of the enterprise.

Leaders of organized labor have also been invited to talk, and to state where the demands of workers are going to stop. Some of the subjects which it has been suggested to be discussed at the conference are the following: Participation in private business on the part of the Federal government, Nationalization of Industry, Possibilities of Increasing

Production, the Relation of the United States to the Rehabilitation of Industry in Europe, Stabilization and Guarantee of Contracts, Definition of Profiteering, the Attitude of Employing Farmers and Manufacturers to Labor, Adjustment Between Property Rights and Community Interests, Participation of Labor in the Management of Industry, Increasing the Purchasing Power of the Dollar, Distribution of the War Debt, Government Price Fixing, the Plumb Plan, and the Solidarity of Farming and Business Interests.

The problems that business men are facing today, growing out of the demobilization of industry following the war, increasing burdens imposed by legislation, decreased production on the part of labor, and heavy taxation, have reached the point where relief is demanded. The purpose of this National Conference, which has for its theme, "Our Country First," is to discuss the situation and endeavor to propose a remedy.

* * *

Detroit Has Home Building Company

The House Financing Corporation, of Detroit, the \$5,000,000 company organized by local industrial and financial leaders to help workmen build their own homes, opened for business on the third floor of the Dime Bank Building recently. Articles of incorporation were granted recently authorizing a capital of \$5,000,000 consisting of 50,000 shares of stock having a par value of \$100 each. Most of the greater industries of the city are represented on the list of stockholders.

In general, it is announced, homes will be built only for applicants having lots free and clear. No loan over \$6,000 will be made and it is intended to confine building activities within the city limits. The loan will not exceed 75 per cent. of the total cost of the home, and the homebuilder is expected to pay back one per cent. of the loan a month. Interest will be at 6 per cent. Fees will be charged for the use of the corporation's plans and for services rendered by it. It is expected that the homes would be paid for within nine years.

All facilities for home-building will be supplied by the corporation—plans, advice in letting contracts, supervision of building operations and the like. Builders and contractors will also be financed by the corporation. It will lend money on contracts and mortgages which in turn will be used for the sale of collateral trust securities, thereby creating a constant fund for the continued construction of homes.

* * *

Million Dollar Home Project for Cleveland

One of the biggest industrial and home building projects ever contemplated for the Middle West soon will be under way near Cleveland, Ohio, when actual development of a 236 acres farm, now being allotted for the purpose, gets under way. The house building angle of the project calls for the expenditure of more than \$1,000,000. The farm formerly was owned by the Telling-Belle Vernon Co., and is located near Willoughby, Ohio, along the New York Central Lines and the Nickel Plate Road tracks. The plans call for the installation of numerous side tracks to accommodate the factory output of the different interests expected to establish plants at the farm. The movement is being fostered by W. H. Dettlebach, Society for Savings Building, and J. W. Wilson, Leader-News Building, realty interests.

The first plant to be established on this site will be the Zenith Rubber Co., composed of Cleveland and Akron capital. Another firm to make automobile parts, is negotiating for 100 acres. The south end of the tract fronts on Euclid avenue, and covers about three quarters

of a mile on that thoroughfare. It is in this section of the acreage that the housing for the employees will be constructed.

* * *

Iowa Farmers Building More Silos Each Year

When silo filling time arrives, there will be at least 5,000 more silos to fill in Iowa than there were two years ago. That is a conservative estimate, according to the agricultural engineers at Iowa State College. More and more the men who own and operate Iowa's first class farm land are becoming convinced that a silo is necessary for the best and most profitable farming and livestock feeding.

Silo filling will be under way before long. There is some slight difference of opinion when corn should be put into the silo, yet the general practice is to begin when the corn is dented, in the dough stage, or when about one-fourth of the husks and the lower leaves are turning brown. The nearer the corn is to maturity, the more food value it has, but it must be cut before it is too mature and dry.

Generally, farmers in Iowa set their silage cutting machines to cut the corn in one-half or three-quarter inch lengths. A longer cut is more economical from the standpoint of rapid filling of the silo, but a short cut makes it possible to get more corn into a silo and also insures less waste in feeding. In filling, it is essential to pack the corn in closely and with a good supply of moisture. If the corn itself is rather dry, then water must be added to make the corn moist.

* * *

Record Output for Flourspar in 1918

All records for flourspar mined and marketed in the United States were broken in 1918, according to statistics compiled under the direction of Ernest F. Burchard of the United States Geological Survey. During the year 263,187 short tons, valued at \$5,465,481 were sold, compared with 218,288 tons, valued at \$2,287,722 in 1917. This represents an increase in quantity of 44,989 tons or nearly twenty-one per cent. and in value \$3,177,795 or nearly one hundred and thirty-nine per cent. The increase was caused mainly by the increased demand for steel for use in the war, as most of the flourspar marketed was used as a flux in making steel.

Flourspar was mined and shipped in Arizona, Colorado, Illinois, Kentucky, New Mexico, New Hampshire, Utah and Washington, in 1918. High prices caused the opening of many new deposits in the western states, particularly in New Mexico, Colorado and Utah, the latter state having become a shipper for the first time.

Flourspar is utilized chiefly in the metallurgical, ceramic and chemical industries. The bulk of the domestic output mainly gravel spar, and practically all of the imported spar is used as a flux in basic open hearth steel furnaces, so that the demand fluctuates with the rise and fall in the production of steel.

* * *

Oak Hill Newspaper Pushes Building

A plan that might offer a good suggestion to clay products manufacturers in other districts is one similar to that which appeared in the "Oak Hill Press" recently. This newspaper gave considerable space to the history and description of several of its brick plants, and, furthermore, contributed a half page advertisement recommending that the citizens of Oak Hill build now. The edition was practically a "Build Now" issue, and contained advertisements from a local contractor and a building supply dealer, which also advocated "Build Now."

BONUS SYSTEM *for* BOILER ROOM EMPLOYEES

It Is Not Easy to Devise a Fair Bonus System for a Power Plant—Some of the Factors to Consider Are Mentioned in This Article

By Robert June, M. E.

THE WRITER is fortunate in numbering among his friends and acquaintances the chief engineers of a dozen or more of the largest power plants in America. Recently he addressed a general letter to these men, asking for a brief description of the bonus systems, if any, used by them as a basis for reward of boiler-room employees. To his surprise, these letters were not especially productive of results—most of the replies containing requests for information instead of furnishing it. One answer is typical of the present situation with the majority of the large power plants.

"We try to educate our boiler-room men to the fact that power must be produced economically and that this means that high operating efficiencies must be maintained. We instruct our men carefully in their individual and collective duties, pay them high wages and generally give them to understand that we regard them as skilled operatives from whom we have a right to expect high grade results. As an incentive to good work, we post each Monday on the bulletin board in the boiler-room, the record of overall boiler efficiency for the preceding week.

"While our results in the main are good, we want to improve them. For one thing, we are going to try to separate the percentage of our 24-hour load handled by each of the three shifts. We are doing this on the principle that if one shift handles 50 per cent. of the load, and another 30 per cent. and the third 20 per cent. that we should get correspondingly better results from the shifts handling the larger loads. After we have established the proper efficiency for each shift, we are going to put in a bonus system of some sort. We are already working on this, but as you realize, there are a good many angles to the problem, and we should be glad to have any information which you may possess, etc."

LARGE PLANTS HOLD CONFERENCES

This, then, is the situation in many large power plants. They are paying high wages, and trying to educate their men, in some cases, by weekly conferences in conjunction with occasional lectures on various phases of power plant operation. Close supervision of the work of the individual, and personal leadership, evoking a high *esprit de corps*, are the principal reliance at present. It is considered, however, that these are not enough, and that a properly devised bonus system probably offers the necessary supplementary incentive.

Turning now to the smaller power plants, we find that they have been quicker to adopt bonus systems. Presumably this is due to the fact that they find it more difficult to provide educational facilities for their men and to exercise close supervision over their work. While the systems used are not

elaborate they seem to be effective. The point here worth noting is that the tendency in both large and small plants is increasingly toward the use of bonus systems.

PRINCIPLES UPON WHICH BONUS SHOULD BE BASED

The term "bonus" may be taken as meaning additional compensation, above a fixed amount, based upon net savings effected above a certain minimum, thru the personal efforts of the recipient. It means that if the operator can reduce the cost per unit of the product, he should receive a portion of the savings. As applied to the boiler-room, a reasonable efficiency, based not alone upon the results previously attained in the particular plant under consideration, but also upon results attained in other power plants of approximately the same size and general characteristics, must be determined upon as a base line or starting point. Before blindly assigning an arbitrary value to performance above this base line, we ought to ascertain with some exactitude the relation of power plant expenses to manufacturing operations as a whole.

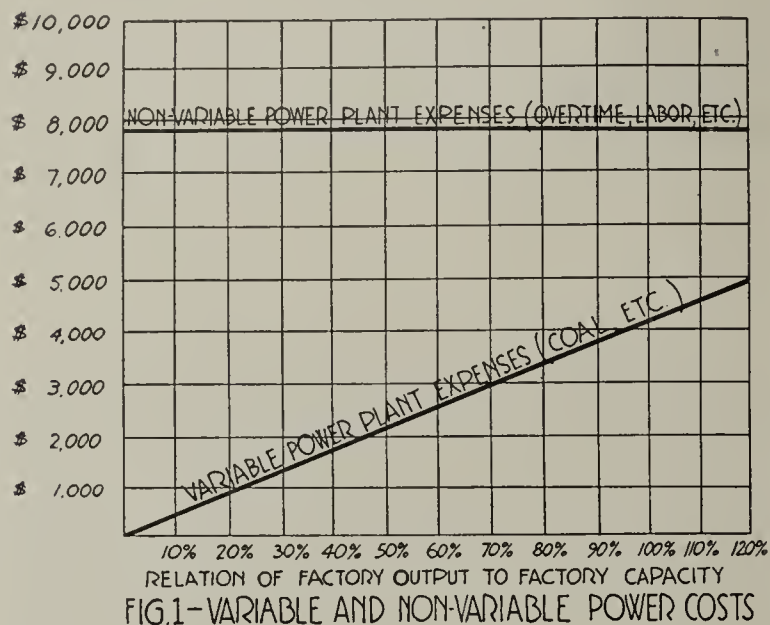
Our reason for this is, that it will practically always be found that power plant expenses for any business, whether central station, brick and clay, textile, refrigeration, paper, etc., so far as the individual plant is concerned, vary along the line of a fixed curve, depending upon the output of the plant. That is, if the factory as a whole is operated at 100 per cent. capacity, power costs will bear a definite relation to the product in terms of pounds, bushels, yards, tons, or whatever unit the product is measured by. Let us say that our power cost is 10 cents, or \$1.00, or \$10.00 per unit, at 100 per cent. factory output. If we reduce factory output to 80 per cent., we will find that we have a different power cost per unit, say 12 cents, or \$1.20, or \$12.00, and if we reduce factory output still further, say to 50 per cent. capacity, we will find our cost per unit further increased to say 15 cents, or \$1.50, or \$15.00.

HOW TO DETERMINE CURVE

The determination of this curve is not a simple matter. It cannot be done in a week or month but it is well worth the effort, even if it takes a round dozen of months. The first step is a complete appraisal of the power plant, which should include the value of the land and buildings occupied, the complete steam generating equipment with all accessories, the turbines, engines, feed water heaters, condensers, pumps, generators, switch-boards, fire pumps, sprinkler systems, all piping and all wiring which apply wholly to the power plant proper, as well as all main lines of pipe and wire on which steam, water, and energy are carried to the factory centers.

With our appraisal in hand we at once discover that the

reason that our power-cost-per-unit curve is a curve, is because power plant costs fall into two divisions—those which do not vary with the volume of product, and those which do vary with the factory production. As an illustration of the non-variable costs, we have interest, depreciation, taxes, and insurance. To these must be added, if the power plant is ready to serve the factory with any amount of power up to 100 per cent. cost of labor, fuel required to bank fires and



to keep prime movers turning over, but doing no useful work, and the lubricants, water, ash removal required for this purpose, heat and light for the power plant, etc. These items vary but little regardless of the factory output—whether it be 30 per cent. or 100 per cent. capacity.

The variable costs are, of course, coal, equipment, maintenance, and a certain amount of general supplies, such as waste, packing, gaskets, etc.

Figure I is a typical graph, illustrating the relation of the variable and non-variable cost factors to the volume of production. Figure II is the curve (in this case assumed) resulting from the combination of the variable and non-variable costs. Armed with this curve, the manager is ready to talk business to his chief engineer.

MANAGER NEED NOT HAVE TECHNICAL KNOWLEDGE

First, be it noted, that in using the curve, the manager does not have to be concerned about a single detail of plant operation. He does not have to study boiler efficiencies, engine performance, economical or uneconomical uses of steam, water or electricity. All he needs is the average factory output for a given period, and a summary from the accounting department of the complete costs of power plant operation for the same period. It is a matter of simple division to establish the power costs per unit of output, and to see how it checks with the standard curve. If the power cost is higher than the standard curve indicates it should be, something is wrong, and it is up to the chief engineer to find and correct the trouble, and to explain to the manager why it should have occurred; if the actual costs check with the curve, the plant has simply done what it should and no one is entitled to a bonus; if the actual power costs are less than those indicated on the curve for the volume of product, good management and constructive effort has been exercised in the engine and boiler rooms, and the chief engineer and every man under him who has helped in the improvement is entitled to a share in the savings.

At this point it may be well to digress for a moment on the point of responsibility of the chief engineer for all items included in the curve under power costs. Warren E. Lewis,

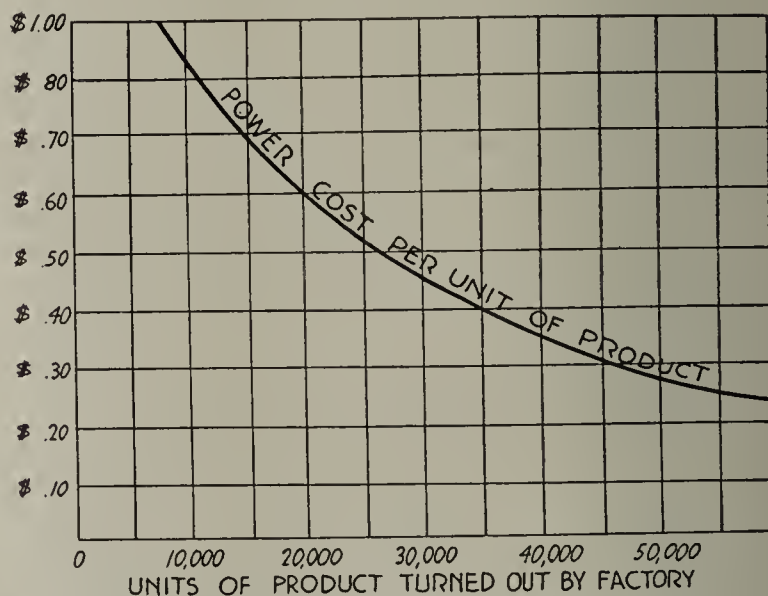
whose engineering record certainly makes him a competent witness, is quite emphatically of the opinion that the chief engineer should be held wholly responsible. He states:

"Some engineers have argued that it (the curve) is not a fair basis of payment, that all that the operating engineer can do is to make steam efficiently, run his engines, pumps, heaters, etc., as well as he knows how, and that he has no control of the situation beyond his department. That is partly true and partly not true. The functions of the chief engineer should extend beyond the confines of the engine and boiler rooms. He should spend at least one-third of his time around the plant, and he should have an inspector going around the plant continually watching out for improper use of power, light, steam, etc. The chief engineer should be directly concerned in seeing that the process machinery is maintained in an efficient condition. This is particularly true with regard to apparatus that uses steam in any form. If we include in the power plant all the equipment which in any way affects the use of fuel, it becomes a comparatively simple matter to place upon the chief engineer the responsibility for the efficiency of the entire power-making and power-using equipment, and for its cost per unit of production."

HOW TO DISTRIBUTE BONUS

Now, getting back to the bonus, let us suppose that the management decides to set apart, say $33\frac{1}{3}$ per cent. of the savings effected, to be distributed as a bonus. Clearly, the chief engineer, individually, is entitled to a certain portion of this, and this portion should be determined by the manager. The proportioning of the remainder among the various power plant employees should be practically in the hands of the chief engineer, for the reason that he is in constant touch with the work of the various individuals.

That the just proportionment of the bonus among the various individuals will cause the chief engineer some serious study is not denied. It is important, however, that individual rewards be established, and that the bonus be not simply divided among the men on a pro-rata basis or with reference to their respective wages. The final results are due to the combined efforts of all of the men, and are beyond the control of any one man.



It is necessary, therefore, to judge each man on the basis of his performance of his individual task. If boiler efficiency falls off, it may be due to improper firing, in which case the fireman should be penalized, or it may be due to failure to keep the boiler clean, free from soot and scale, in which case the man who does the cleaning should lose all or a part of his bonus, or again the loss in efficiency may be due to leaky boiler settings, a condition clearly outside of the

jurisdiction of the fireman, and clearly up to the boiler-room foreman.

POWER EQUIPMENT SHOULD BE CHECKED

This principle of individual responsibility applies all along the line. For instance, if a new grade of coal is brought into the plant and the chief's assistant engineers do not make it their business to see that the firemen are fully instructed regarding the proper method of firing, they are guilty of a breach of duty for which they should suffer. The engineers are, of course, responsible for permitting radiation losses to continue because of failure to insulate pipes, and for failure to correct leaky valves, traps, worn gaskets, etc. The engineers or boiler-room foreman must be held responsible for economical operation in cutting boilers in or off the line, operating them at economical ratings, and banking or killing fires.

When the bonus is not earned by a particular individual, it may be due to his own fault in not following instructions, to faulty maintenance, making compliance with instructions impossible, or to faulty supplies. With so many angles to the problem, it is evident that close inspection and constant supervision of the work of the individual is absolutely necessary if material reductions in power plant costs are to be made.

It is realized that the program here outlined may seem elaborate. The small plant operator, in particular, may think it complicated, but it is precisely in the small plant that astonishingly good results can be attained. Admitting elaborateness, this basis of bonus is certainly thoroughgoing. To the writer's mind there is no point whatever to paying firemen a bonus for high CO₂, or for high boiler efficiency, if no corresponding effort is made to see that the steam, when produced, is utilized without preventable waste.



Automobile Pullman Emphasizes Need for Good Roads

Material, civic and public interests who witnessed a mammoth automobile passing thru Cleveland, Ohio, recently, saw in the giant palace on wheels a representation of the symbol of good roads which they have sought to set before the people most responsible for putting good roads into effect, and people who must support this activity to make good roads a reality instead of theory. The truck was being given its initial try-out in Cleveland, preparatory to starting from Marion, Ohio, for Los Angeles, during which trip it will be used for the furtherance of the good roads movement in the Middle and Far West. The campaign is under the direction of Charles G. Bailey, president of the Indiana Truck Co., who had it built for this especial purpose. To say that the automobile is thirty feet long, and that it embodies all the appointments of the modern Pullman railroad coach, is sufficient. The point is that it is the pioneer vehicle to lead the way toward better transportation for the country.

Commenting upon this pioneer movement as one of the most vital problems the country now faces, H. S. Firestone, president of the Firestone Tire & Rubber Co., Akron, said:

"The improvement of roads should be the first essential toward aiding the returned soldiers who may take to the soil as a means of livelihood, and while it is commendable on the part of the department of the interior in working toward this end that the services of the boys abroad will not be forgotten at home, all the means for making their agricultural efforts successful should be considered. The many centers for production and marketing must be tied together and made easy of access. Good roads alone will meet this need. The most efficient transportation must be provided.

This already is contained in the automobile. Rural motor express already is a reality, beyond the experimental stage. From the farmer's viewpoint motor truck express service conserves man power, encourages intensive farming, facilitates traffic for him, gives him a better market, and the consumer a better and cheaper product. Truck lines, therefore, in peace as well as war are now the logical avenues between supply and distribution."

Importance of the relation between the automobile and the road is even more graphically demonstrated in the comparison made by a high official of the National Paving Brick Manufacturers' Association, after viewing the initial performance of the Bailey car here. This organization, as for years past, has been one of the leaders in the movement for better roads. Brick roads have been considered preëminent by its branches and members, but good, permanent roads movement has met with strong response from this institution.

"The trip of the Bailey car," says this official, "may be the beginning of the realization of all we have sought in the last few years. Most folks who have had experience in driving automobiles, or those who contemplate the purchase of a car, are now taking upon themselves a disposition to know more about the car. Experience has developed countless inquiries by the purchaser, which formerly were ignored for the glib words of the car salesman. This same experience now is developing a newer form in inquiry about the road.

"How long will the road last? How long before chuck holes appear? Will it ravel away? Will its even, smooth surface remain? Have I got to jog over a road out of repair for two or three years?

"These are only a few of the questions to be applied with reference to roads, evolving out of the experience in motor car purchase and driving.

"The preachment during the war to economize is being carried now that peace is here. This does not mean going without. It means to get the maximum service for dollars spent. In the realization of economy and comfort in transportation of today, the car and road cannot be separated. The logic of such query and investigation leads to a certain conclusion.

"Sum up all the merits found in one car. The car in which most merits are found is the car that will be purchased—if the money holds out. That, also, is the road that is going to be bought. Enumerate in the mind the merits of a certain road. Transfer them into the column in which brick has been written. When the process of inquiry is finished, it will be found that the column containing the most merits is the brick column. Some of the merits that may be seen in that column will be durability, least traction resistance, comfort in travel, maximum speed, carrying capacity, safety—all these will be found."



Chicago Still in Grip of Building Tie-Up

Altho the deadlock which exists in the Chicago building tie-up, about to enter its sixth week, has not been broken yet, there are hopes for a settlement soon.

The best part of the building season is rapidly passing away without a turn of work being done in building operations to cost \$125,000,000, which are either in course of construction or ready to start. There is a shortage of fully fifty thousand domiciles and all indications point to a serious condition in the housing problem this fall.

Representatives of the Federal Government have come to Chicago recently to aid in getting the two factions together and the public builds much hope on a near future settlement.

DISMISS DIFFIDENCE *to* *be* SUCCESSFUL *in* SELLING

Nearly Everyone at Some Time or Other Is a Victim of Bashfulness in Selling—The Author Points Out in This Article Why It Is Essential to Overcome Timidity

WE CALL IT DIFFIDENCE when we grow up and find it in business men, but it is nothing more than the bashfulness of our kid years staying with us long after it ought to have been overcome.

It sounds a little foolish to talk about a salesman being bashful and the general public does not carry any such idea as that about the traveling man. You might have trouble in convincing even a buyer that any salesman calling on him ever felt any diffidence.

But still, it is a fact that many business men, some of them salesmen in the field of brick and clay, are naturally diffident. These men had to force themselves at first to tackle buyers who were strangers to them. It was mighty hard work to ask men they did not know to part with their money. Some such salesmen, to the end of their days will be troubled with that same diffidence.

If you were a buyer you would not always be able to pick

up his diffidence with the result that he appears too bold and shows too much effrontery.

DON'T LET BASHFULNESS STAND IN THE WAY

Any old salesman who will own up to the truth will admit that time and again he has allowed his diffidence to keep him from saying to a buyer what he knew he ought to say to get the business. He has let bashfulness stand in the way of his getting an order or increasing an order.

Of course diffidence is foolish. There is no real reason for a salesman being afraid of a buyer. Nobody is going to do you any harm because you attempt in a gentlemanly way to sell him belting or castings or shafts. You soon get past the initial difficulties caused by your diffidence and you learn to go thru a regular formula about what you have to sell and do it without apparent nervousness. But it is when you are called upon to do something different from the routine operation, when you find it necessary to bear on harder than usual, or to make a strenuous effort to sell something unusual, that you feel that bashful streak cropping out.

If you have the determination you ought to have, you can overcome that diffidence each time it troubles you, and every time you put it down, it becomes easier to do it. As a matter of fact you cannot become a really successful salesman unless you do get the upper hand of this trait.

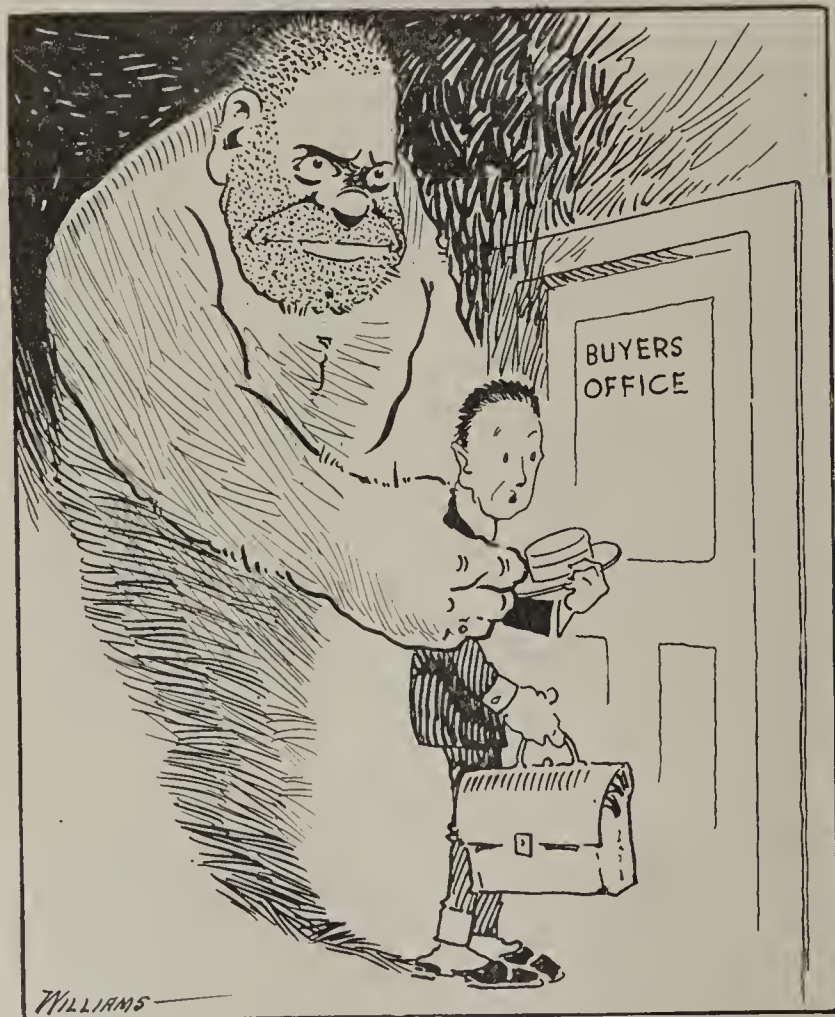
You cannot get rid of diffidence by making a resolution on the first of the month that you will never be bashful again. You need to keep in mind the fact that you are determined to eradicate that habit and every morning when you start out you must declare to yourself that "Today I will go right to the point and not hang back and feel afraid." And every time you feel yourself slipping, pull yourself up with a jerk and set your determination deeper.

If there is some unusual proposition you want to put up to a man when you call on him, get it all figured out as you want to say it. Arrange your statements in the best and strongest form and say them over and over again to yourself until they are so familiar that you can put that proposition while thinking about something else.

If you get what you have to say in such form as this, no amount of diffidence can keep you from saying it if you have will power. You may shake in your shoes and the buyer may be crusty and sarcastic and he may act as if he thought you had no business there, but what you wanted to say will be said by your tongue in spite of what you feel.

This is one way of getting the better of your diffidence. Diffidence is a fault that can be eliminated by persistence and if you form the habit of going right ahead in spite of it, having your plan so well laid that it will carry on almost of itself, you will find yourself developing more interest in what you are saying and forgetting that you are bashful.

Diffidence gets the better of you because you get to thinking about how you dread a certain thing. If you could pick up your sample kit or catalog and walk right into the pres-



If You Dread To Go Into a Buyer's Office and See Him,
Instead of Worrying About It, Go In!

ent the diffident salesmen. They have to a great extent overcome their appearance of bashfulness. They walk into your presence with an air of complete confidence and you cannot tell how they actually feel beneath that surface. Sometimes the diffident salesman will make too hard an effort to cover

ence of the biggest and most formidable buyer you know without having a minute to think about it, and if you had to talk for your life as soon as you met that buyer, you would talk and you would forget your diffidence. Diffidence comes from your thinking over and over how much you dread a certain thing.

When a man must act, he has no chance to become fright-



You Cannot Make a Sales Manager Believe You Are a Coming Man If Your Knees Shake So That He Can See It.

ened. And if you begin to feel diffidence, if you can develop action right away, you will relieve the diffidence. When you feel bashful, don't stop to think about it, act. If you dread to go into a buyer's office and see him, instead of worrying about it, go in!

ACTION BEST CURE FOR STAGE FRIGHT

The best way to cure stage fright is to get into action. The best way to cure "buck fever" is to start right after the buck. Get your legs so busy that they will have no time to wobble. Get your brain occupied in thinking what you want to say and in saying it and you won't have time to think that you're afraid to say anything.

If it is ever true that he who hesitates is lost, it is true of the man trying to overcome his diffidence. It is when you stop to think that your diffidence takes hold of you. Do your thinking before you start out and be in such mental trim, so well prepared, that you do not have to stop to think before you start in with your salesmanship.

Every time you overcome your diffidence makes it easier the next time. As you gain in experience, you gain in confidence. You find that buyers are often more friendly than you expected and that they are even glad to have you bring to their attention the unusual matter you dreaded to bring up.

You will find that you may be as big a man as the buyer himself and that there is no reason why you should stand in awe of him, even if it is important that you show him every courtesy.

One of the best things to help you cure your diffidence is the absolute necessity for making sales. If you reach the

point where you simply must sell the stuff, you will down your diffidence because you have to do so. A man can do many things when he *must* that he would never do because he ought.

It is a fact that there are some men in whom diffidence is so firmly fixed as a characteristic that they simply cannot get rid of it. Such a man may not be fitted for salesmanship. If he is to be too badly handicapped all his days by being bashful, he might better get into some other occupation where he will not be dependent for success upon his ability to meet and lead men who are comparative strangers.

The timid, shrinking, backward chap who cannot overcome his fear of the other fellow, will not make a highly successful salesman. He may be able to earn a living on the road, but that is not enough. If nothing more than that is in sight, it is better to tackle some work for which there is a more natural fitness and adaptitude.

SELLING YOUR SERVICES

Your success as a salesman depends to a great degree upon how well you are able to sell your services to a good employer. If you are so diffident that you cannot sell goods easily, you will be too diffident to be able to sell your services to the most desirable employer.

When you have reached the top in one situation, if you are to go any farther, you must begin over in another place somewhat below the top. Unless you are able to walk into a sales manager's office and present to him in a convincing way your qualifications for a job, how can you hope to sell your services to him?

You cannot make a sales manager believe you are a coming man if your knees shake so that he can see it. He knows the coming man in his line of work can't come with wobbly knees.

For the advantage of your present work and for the sake of opportunities that may offer for better work and for positions higher up, you must overcome the diffidence that is a hang-over kid fault.

If you just go along hoping that your diffidence will wear itself out, slipping out of every place where it troubles you, with the least possible effort to overcome it, you are going to be the salesman who will be called into the office when they want to offer some salesman a particularly good position higher up.

Just because you have always been bashful is no reason for thinking you must continue always to be so. You have heard fellows acknowledge a fault with the resigned statement, "Well, I've always been that way, and I can't help it."

You can help it! I don't care how diffident you were as a kid or always have been, since, you can do something toward overcoming that detriment if you will make the effort.

Anything worth doing is worth a lot of hard trying. Don't expect that you can wish diffidence out of your system. It has to be dug out, and you will have to keep digging for a long time. It's like any weed. As soon as you stop digging it out, it begins to gain on you. The only way is to keep at work until you can forget that it ever troubled you.



Failure to keep kilns in proper repair has resulted in many companies in Kentucky annually losing money thru wasting fuel, and getting bad results, but still there are many kilns found, especially in small towns, which are in such bad repair that it is a question as to how the brick man can get any kind of results at all. There is really very little excuse for allowing kilns to get into a tumble down condition, considering the many months that kilns are idle, and the fact that the brick man can make repairs while removing brick.

MINES REPORT DECREASED OUTPUT of CLAY in 1918

Altho a Decrease in Output of Clay Mined in 1918 Compared With 1917 Is Reported, Yet the Value of Clay Mined Shows a Considerable Increase

THE QUANTITY and value of the clay mined in the United States in 1918, according to an advance statement issued by the United States Geological Survey, Department of the Interior, based on reports furnished by clay miners, showed a considerable decrease in output but an increase in value compared with 1917. The total quantity of clay mined and marketed as such is estimated at 2,810,000 short tons, valued at \$9,207,000, or \$3.28 a ton. This is a decrease of about 304,000 tons, or 10 per cent. in quantity, but an increase of about \$1,165,000, or 14 per cent. in value. The imports decreased in both quantity and value.

The outstanding feature of the clay-mining industry in 1918, besides the considerable general decrease in output and the increase in price, was the large decrease in the output of the clays that enter into the manufacture of the highest grades of ware in spite of strong demand and high

Production of clay in the United States in 1917 and 1918*

Kind.	Quantity (short tons).	Value.	Aver- age price per ton
1917.			
Kaolin	31,885	\$301,378	\$9.45
Paper clay	174,449	962,421	5.52
Slip clay	16,972	70,505	4.15
Ball clay	107,406	569,240	5.30
Fire clay	2,347,972	5,625,095	2.40
Stoneware clay	81,352	113,839	1.40
All other	353,808	400,068	1.13
	3,113,844	8,042,546	2.58
1918.			
Kaolin	27,000	340,000	12.59
Paper clay	111,000	938,000	8.45
Slip clay	20,000	100,000	5.00
Ball clay	82,000	651,000	7.94
Fire clay	2,200,000	6,600,000	3.00
Stoneware clay	90,000	158,000	1.76
All other	280,000	420,000	1.50
	2,810,000	9,207,000	3.28

*Estimated.

prices. These clays are produced principally in the South, and the decrease in their production was caused largely by the scarcity of labor and fuel and the difficulties of transportation. It was almost impossible to get shipments thru to the North, where the principal market for these clays is found.

Fire clay is the product of greatest value, the 2,200,000

tons produced being valued at \$6,600,000, or \$3 a ton. This is a decrease of about 148,000 tons, or 7 per cent., in quantity, but an increase of \$975,000, or 17 per cent., in value compared with 1917. Kaolin, paper clay, ball clay, fire clay, and "all other" clay decreased in output, but only one kind—paper clay—decreased in value. The kaolin, which was used principally in the manufacture of high-grade pottery, amounted to 27,000 tons, valued at \$340,000, a decrease of 5,000 tons, or about 15 per cent., but an increase of nearly \$39,000 or 13 per cent. The average price per ton of kaolin was \$12.59 at the mine, an increase of \$3.14. The output of ball clay, which is also used largely in pottery, was 82,000 tons, valued at \$651,000, a decrease of 25,000 tons, or about 24 per cent., in quantity, but an increase of nearly \$82,000, or 14 per cent., in value. The average price of this clay per ton in 1918 was \$7.94, an increase of \$2.64 compared with 1917. Paper clay, another valuable variety, the principal use of which is indicated by its name, decreased in both output and value, the decrease in quantity being about 63,000 tons, or 36 per cent., and the decrease in value about \$24,000, or 3 per cent. The output in 1918 was 111,000 tons, valued at \$938,000.

IMPORTS

The imports of clay decreased 72,701 tons, or 27 per cent., in quantity, and \$123,265, or nearly 9 per cent., in value. The only clay that was imported in large quantity was kaolin, 168,100 short tons of which were entered for consumption, valued at \$1,153,240, or \$6.86 a ton, at the port of shipment, a decrease of 72,929 tons, or 30 per cent., in quantity, and of \$162,529, or 12 per cent., in value. The average price per ton increased \$1.40. The imports of clay

Imports of clay in 1917 and 1918		
Kind.	Quantity (short tons).	Value.
1917.		
Kaolin or china clay.....	241,029	\$1,315,769
Common blue	88	709
Unwrought or unmanufactured.....	26,581	123,439
Wrought or manufactured.....	338	2,142
	268,036	1,442,059
1918.		
Kaolin or china clay	168,100	1,153,240
Common blue	114	983
Unwrought or unmanufactured.....	26,984	163,484
Wrought or manufactured.....	137	1,087
	195,335	1,318,794

other than kaolin are comparatively small. In 1918 kaolin constituted 86 per cent. of the total quantity and 87 per cent. of the value of clay imports.

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products Such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

DEMAND IN POTTERY TRADE IS UNUSUALLY BRISK



ON ACCOUNT of the heavy volume of new business being received by general ware pottery manufacturers thruout the United States the factory managers are confronted with one of the gravest problems in history—that of filling all orders on time. It is slowly dawning upon the jobbers and department store buyers of dinnerware and hotel ware that they cannot expect any relief from import sources for years to come. This means that the American potteries will be crowded with business for an indefinite period. With the approach of the holiday season there has been a rush among buyers to anticipate their future requirements, this with a view of obtaining shipments as quickly as possible. Pottery warehouses are not filled with merchandise. There has been a scarcity of cups and saucers and plates, the demand for these items being so great that shipments have been made practically direct from kilns. There has been little if any opportunity for the manufacturers to accumulate much stock, on account of the heavy demand. The bulk of all clay shop work is on orders. It has been a long time since clay shop workers have been given "stock orders." It is an admitted fact that if buyers knew of any general ware pottery having any surplus stock in their warehouse it would be immediately purchased.

KILN CAPACITY NEEDED

During the last seven months there has been practically no increase in the general ware kiln capacity of the country, altho additional decorating kiln capacity has been established in the Chester and Newell, W. Va., pottery districts. Many of the older pottery plants in the East Liverpool district have so built up their sites during recent years that there is little room for any kiln expansion.

At Sebring, Ohio, there has been some increase in kiln capacity thru the establishment at the Limoges China Co.'s works of a continuous kiln for the firing of bisque ware. The operation of this kiln has been of a character that the attention of other pottery manufacturers has been attracted. It is conceded, however, that sooner or later the erection of tunnel or continuous kilns for domes-

tic pottery firing will be along general lines. It has been pointed out, thru the survey of records, that the increase in the production of bisque ware over that obtained thru updraft kilns is so great that there is little use in making comparison. The operation of these tunnel kilns also eliminates kiln crews and at the same time decreases overhead costs in production costs. A number of East Liverpool, Ohio, pottery manufacturers a few days ago made a thoro inspection and study of the Sebring kiln, and it is possible one or more of these kilns will be built in the East Liverpool district before the end of another year.

NEW LINES BEING DEVELOPED

The Edwin M. Knowles China Co., of Newell, W. Va., are now showing a new plain dinner shape which has been named the "Hampton." The firm is the first to show a new shape since before the war, and nothing new in domestic pottery was brought out during the war period, nor last fall after the signing of the armistice. Other new shapes are to be shown by the Cartwright Bros. Pottery Co., this firm naming the shape, which is also plain, "The Argonne." The Homer Laughlin China Co. will bring out a plain and a fancy shape for the 1920 trade, and will show these two shapes later in the fall season. The West End Pottery Co., of East Liverpool, is showing the first pieces of a new plain shape, and the Standard Pottery Co. will also show a plain shape late in the fall for January delivery. The Knowles, Taylor & Knowles Co., of East Liverpool, Ohio, will also have a new plain shape, which will be placed in their sample rooms probably in November. Modelers are very busy in the East Liverpool district, and about six more new shapes will be ready for the January buyers. With one or two possible exceptions none of the new shapes will be ready for delivery before the year end, as orders for existing shapes are so heavy no advance stocks of a new shape can be quickly accumulated.

There is some talk heard of the erection this fall of a new seven kiln pottery in Harrison County, Ohio, but official details are lacking. Names of several Eastern Ohio pottery manufacturers are linked with the report, but reported plans for the improvement are neither affirmed nor denied.

The Liberty China Co., at New Lexington, Ohio, is now operating on a full schedule in the manufacturing of semi-porcelain hotel ware exclusively. The plant is under the management of Burgess Cuning. A number of improvements have been made to the property, and it was formerly used in the manufacturing of electric porcelain ware. Joseph Manor, formerly general manager of this pottery, has left the organization to become factory superintendent of the Albright China Co., at Carrollton, Ohio. He is one of the oldest pottery managers in the country.

SANITARY WARE DEMAND PICKS UP

A general improvement in the demand for sanitary pottery products is reported. This has been caused by an improvement in building conditions thruout the country.

Sanitary pottery plants in the West Virginia district have increased their capacity thru the employment of additional help, or thru the erection of additional kilns. During the war period there was a decided lull in the demand for sanitary pottery ware. Manufacturing of some lines was practically eliminated. Of late, however, conditions have been reversed, and there is a decided uplook to the trade just now.

Electric porcelain potteries are also reporting a better volume of business both in hand and in sight. While it is true that there has not been a great amount of new electric railway construction this season, there has been more or less replacement business given the porcelain manufacturers. This condition in this branch of the trade is expected to continue thruout the year.

General ware pottery decorators who have been working under the rules of an independent local union of their own plan to eliminate their present organization and become identified with the National Brotherhood of Operative Potters. These workers claim that because they are not affiliated with the brotherhood they are not receiving the wage advances their fellow workers do, hence, their change of heart.



The Fulper Pottery Co., Flemington, N. J., specializing in the production of fine art pottery, has succeeded in developing a perfect doll head, and is planning to go extensively into this branch of business. This trade has been practically all of German origin in time gone by, and it stands to the great credit of the American pottery industry that success has been attained, after considerable experiments, in this work. The Fulper production is the "last word." The heads are fine reproductions of human features, with exquisite coloring for complexion. This is the first pottery in America which has successfully accomplished the manufacture of doll heads from clay aggregates, with a result superior to the German production. The heads are known as china, porcelain, bisque compositions, and are used on Horsman dolls. The company has entered into contract with E. I. Horsman & Aetna Doll Co., Inc., New York, for all of the heads it can produce for a number of years to come. The Fulper company had a fine exhibit of this new specialty at the state fair at Flemington during the first week in August, taking many orders for fall and winter delivery for Fulper-Horsman dolls. A card displayed in connection with the heads set forth that this was "America's Greatest Pottery Achievement." W. H. Fulper is head of the company.



A special meeting of the United States Potters' Association was held at the William Penn Hotel, Pittsburgh, Pa., August 5, to discuss the demand of the union pottery workers for a 25 per cent. increase in wages and changes in working conditions. The Labor Committee of the association has arranged for a meeting with a like committee of the operatives at an early date. The members of this committee for the association are: W. E. Wells, Newell, W. Va., chairman; W. L. Smith, George C. Thompson, H. A. Harker, E. M. Knowles, H. J. Taylor and Frederick McMichel, all of East Liverpool, Ohio; Fred Sutterin and A. G. Dale, Trenton, N. J.; Guy L. Crooks, Crooksville, Ohio; F. A. Sebring, Sebring, Ohio; W. S. George, East Palestine, Ohio, and H. D. Wint-ringer, Steubenville, Ohio. For twenty years the "collective-bargaining system" has been the basis of working and negotiations between the employing potters and operatives, and it is expected that similar arrangements will be made to cover the next two years. The present agreement expires on October 1.

The revival of pottery activities at Trenton and in other parts of New Jersey has come around even before the time anticipated, and things in this branch of the ceramic industry are looking decidedly bright. The present situation is well expressed by Frank H. Hutchins, Trenton, first vice-president of the National Brotherhood of Operative Potters, who says: "From the knowledge that I have at hand the pottery trade is once again in the ascendancy to a marked degree." He points out that many of the men in this line who sought other work temporarily during the slack times have now returned to their former positions, and that the business generally is in a flourishing condition. The resumption of building activities, it is set forth, has been the big factor in bringing this condition about.



The Thomas Maddock's Sons Co., Trenton, N. J., manufacturer of sanitary earthenware, has filed plans for the erection of an addition to its workrooms and kiln department at Carroll and Ewing Streets, to cost about \$50,000. Contract for construction has been let to Lewis Lawton & Sons, Broad Street Bank Building, and it is proposed to inaugurate work immediately.



Ceramics Section of Bureau of Standards Moving to Washington

Because new buildings erected in Washington for the Bureau of Standards of the Department of Commerce are now ready for use, a large part of the machinery installed in the Pittsburgh, Pa., station in the arsenal, Fortieth and Butler streets, is being removed and sent to Washington.

This machinery, consisting chiefly of that for the glass industry, cement testing and ceramic testing work, has been in use here for about 10 years.

The operation of the additional machinery in the new buildings at Washington and the consumption of gas by the clay products section which are being moved from Pittsburgh, involve increased expenditure according to a report made to the Secretary of the Treasury by Secretary William C. Redfield, of the Department of Commerce. In this report, Mr. Redfield submits supplemental estimates of appropriations in the sum of \$85,000 required by the Bureau of Standards for the fiscal year of 1920.

Some of the clay testing machinery will be left in Pittsburgh and the station there will be continued but will, it is said, be a smaller station than it heretofore has been.



Find Potash Deposit in Pennsylvania

Ceramists are deeply interested in the announcement of the discovery of immense quantities of potash in Tioga County, Pennsylvania. According to the statement of Col. Henry C. Demming, who was State Geologist of Pennsylvania for many years, the discovery was made some time ago, but was not made public until after the find had been carefully passed upon by mining, chemical and geological experts and it had been ascertained that the mineral existed in quantities to make it commercially important. If the preliminary reports are substantiated by subsequent investigators, there will be available for use more than 12,000,000 tons of potash.

This would mean that, without considering any other possible sources of supply, the United States would be entirely independent of foreign sources of potash for several generations.

1918 VALUE *of* POTTERY LARGEST EVER RECORDED

*Potters Have Record Year Despite Handicaps
Which Held Back Production—American-
Made Dining Set Placed in White House*

THE POTTERS of the United States reported another record year in 1918 in the value of their output, which was \$65,222,951, an increase of \$9,060,429, or 16 per cent., over the value in 1917, according to a report prepared by Jefferson Middleton, of the United States Geological Survey, Department of the Interior, soon to be published.

The comparatively small imports of pottery for several years—tho they were slightly greater in 1918 than in 1917—caused an increased demand for domestic ware. It was difficult to supply the market even before the United States entered the war, on account of transportation embargoes and shortage of cars, labor, fuel, and materials. All these handicaps were greater in 1918 and were then supplemented by others, and the large demand by the Government for crockery for the Army and the Navy made the tasks of the potters still more difficult. In spite of all obstacles, however, the potters bent their efforts to the great work of winning the war, complying with the regulations without thought of their personal sacrifices.

Altho the value of the output was the largest yet recorded the volume was not correspondingly large, owing to the increased cost of production and the consequent high prices. The output was probably about 70 per cent. of the capacity of production. The principal causes of the failure to reach the capacity of production were the shortage of labor and the indifference of some of the operatives, but scarcity of material and fuel was a contributing cause. Continued efforts were made during 1918 to replace promptly men called to war, to reduce the costs of manufacture, and to increase output by introducing labor-saving machinery, such as improved stove rooms, automatic spreading and batting-out machines, coal unloaders, and tunnel kilns, all of which made 1918 a notable year in the improvement of the equipment of the potteries of the United States.

A notable event in the pottery industry in 1918 was the placing in the White House of an American-made state dining set, which is described in the report to be issued by the Geological Survey.

WAR-TIME RESTRICTIONS

The only pottery products whose manufacture was restricted by reductions in the use of fuel imposed by the Fuel Administration were sanitary ware and stoneware, except chemical stoneware. The allotments of fuel for sanitary ware and stoneware were reduced respectively 50 per cent. and 15 per cent. below the average quantity used annually in 1915, 1916, and 1917. In spite of the restriction in fuel the value of the stoneware made increased \$588,339, or 5 per cent. over 1917, tho the quantity produced was probably less than that in 1917, notwithstanding an increase in the output of stoneware crocks and jars, which were used extensively in the preservation of foods. The value of sanitary ware decreased \$1,395,079, or 11 per cent., a decrease due to the general reduction in

building operations, in which this ware finds its chief use.

Not only was the potters' supply of fuel cut down, but the Conservation Division of the War Industries Board on September 18 issued an order limiting the number of articles to be manufactured and prohibited the making of new molds for articles not on the permissible list and the addition of new decalcomania patterns or copper-plate engravings. The potters anticipated this order and voluntarily reduced very substantially the number of articles to be manufactured. The order of September 18 was revised and reissued on October 30 so as to permit the manufacture of a few more articles, principally articles of other sizes than those named in the original order. An order was issued by the Priorities Division of the War Industries Board on October 16, restricting the manufacture of pottery to 50 per cent. of the output of 1917. This order was subsequently modified to permit three glaze firings a month. These orders were issued late in the year, and as they were canceled soon after the armistice was signed they had little if any effect on the industry.

PRODUCTION

Every variety of ware classified in the report to be issued by the Geological Survey except red earthenware and sanitary ware increased in value as compared with 1917, and all except these two reached their maximum value. Whiteware, which includes the commoner grades of household wares, valued at \$25,305,926, showed the largest increase, \$4,385,457, or 21 per cent.; porcelain electrical supplies, the only pottery product that is used directly in military or naval field operations, were valued at \$12,505,970, an increase of \$5,054,384, or 32 per cent.; and china, the pottery of highest grade, was valued at \$6,307,349, an increase of \$1,501,443, or 31 per cent. The value of china in 1918 was four times as great as it was in 1908, which augurs well for the future of the pottery industry in the United States. Red earthenware, valued at \$906,861, decreased in value \$158,324, or 15 per cent. One of the causes assigned for the decrease in red earthenware was the Fuel Administration's curtailment of fuel to florists, who are large users of flower pots.

Chemical pottery—that is, chemical stoneware and chemical porcelain—which was so necessary to the manufacturer of munitions of war, naturally greatly increased in both quantity and value. The increase in 1918 was \$670,278, or 61 per cent. Chemical stoneware, valued at \$1,547,779, increased in value \$615,866, or 66 per cent. Chemical porcelain, which is a comparatively new product for the United States, was valued at \$221,931, an increase of \$54,412, or 33 per cent.

The value of whiteware and china, which comprise the general household wares and constitute nearly half the value of all pottery products, was \$31,613,275, an increase of \$5,886,900, or 23 per cent. over 1917. If to this sum is added the value of sanitary ware and porcelain electrical

supplies, the total value in 1918 was \$55,360,383, or \$7,546,205 more than in 1917, and 85 per cent. of the value of all pottery products in 1918.

PRINCIPAL PRODUCING STATES

The value of the wares ranged from \$25,779,654 in Ohio to a few hundred dollars in Porto Rico. The value of the pottery products of Ohio in 1918 increased \$4,425,948, or 21 per cent., over 1917, and was nearly 40 per cent. of the

Geological Survey, and New York reported every kind except stoneware.

IMPORTS AND EXPORTS

The value of the pottery imported in 1918 at port of shipment was \$6,393,580, an increase of \$60,266, or less than 1 per cent., over 1917. The value of domestic pottery exported in 1918 was, approximately, \$1,479,552, a decrease of \$72,431, or nearly 5 per cent. The imports con-

Pottery Products in 1917 and 1918

Product	1917	1918	Increase or Decrease in 1918	
			Value	Per cent.
Red earthenware	\$ 1,065,185	\$ 906,861	—\$ 158,324	—14.0
Stoneware and yellow and Rockingham ware.....	3,865,825	4,454,164	+ 588,339	+15.2
Chemical stoneware	931,913	1,547,779	+ 615,866	+66.1
Chemical porcelain	167,519	221,931	+ 54,412	+32.5
White ware	20,920,469	25,305,926	+ 4,385,457	+21.0
China	4,805,906	6,307,349	+ 1,501,443	+31.2
Sanitary ware	12,636,217	11,241,138	— 1,395,079	—11.0
Porcelain electrical supplies.....	9,451,586	12,505,970	+ 3,054,384	+32.3
Miscellaneous	2,317,902	2,731,833	+ 413,931	+17.9
	\$56,162,522	\$65,222,951	+\$9,060,429	+16.1

value of the output of the entire country. The State's principal pottery product was white ware, valued at \$14,779,620, which was an increase of \$2,556,794, or 19 per cent. over 1917. The value of the white ware made was 61 per cent. of the value of the entire pottery output of Ohio in 1918, and the State's output of this ware was 62 per cent. of the output of the country. Columbiana was the leading county. Its output in 1918 was valued at \$11,312,660, or 44 per cent. of the entire output of the State, an increase of \$2,166,270, or 24 per cent. over 1917. The value of white ware, the chief product of Columbiana County, was \$8,951,430, or considerably more than half that of the State's output of white ware. Mahoning County was second, with pottery products valued at \$3,591,174, and Summit County was third, with wares valued at \$2,471,974. Columbiana and Mahoning counties, Ohio, and Hancock County, W. Va., contiguous territory, form the largest pottery center of the country, a center that grew out of the industry started at East Liverpool, Ohio, in 1840. The value of the pottery marketed in these counties in 1918 was more than \$17,000,000.

New Jersey was the second largest pottery-producing State. Its output in 1918 was valued at \$12,570,842, an increase of \$34,999 over 1917. The principal pottery product in New Jersey in 1918 was sanitary ware, the output of which was valued at \$6,151,752, a decrease of \$1,050,919, or 15 per cent. Sanitary ware constituted 49 per cent. of the value of the State's pottery products in 1918. Mercer County led in 1918, with wares valued at \$10,219,282, or more than 81 per cent. of the value of the total output of the State.

West Virginia was third among the pottery-producing States in value of output in 1918. Its marketed pottery wares were valued at \$8,693,206, or over 13 per cent. of the total, an increase of \$1,449,306, or 20 per cent., over 1917. Its principal product is white ware valued at \$5,480,581, an increase of \$1,059,564, or 24 per cent., over 1917. Hancock was the leading county, reporting wares valued at \$4,630,302, an increase of \$941,450, or 26 per cent. Nearly all this was white ware.

In 1918 New Jersey, Ohio, and Pennsylvania each reported every kind of pottery classified in the report of the

sist almost entirely of high-grade ware, 93 per cent. of the value of the imports in 1918 being of that kind, but the exports are chiefly of the lower grades of ware.

The value of the pottery imported into the United States in 1918 added to that of the domestic pottery produced makes a total of \$71,616,531. By deducting from this total the value of the exports of domestic ware, and of the re-exports of foreign ware, \$70,099, the value of the apparent net consumption was \$70,066,880, of which the domestic production was 93 per cent. This percentage is the highest yet attained. In 1917 and 1916 it was 92 per cent.

* * *

Bulletin on Silo Construction Issued

The Agricultural Experiment Station of the Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa, has just published Bulletin 189 on "Silo Construction." This new bulletin, which is a revision of Bulletin 141, contains one hundred and forty-eight pages including forty-three illustrations and furnishes information on the construction of all types of silos. It goes into considerable detail on materials, design and costs and will undoubtedly be of interest to all manufacturers of materials entering into silo construction. Considerable space in this booklet is devoted to the use of clay tile for building silos.

* * *

The U. S. Railroad Administration brought all the present shipping troubles upon itself some three months ago, according to the opinion of Kentuckians, when it laid off thousands of shopmen as a conservative curtailment measure. At that time leading shippers stated that it would result in a serious car shortage, and for several weeks reports showed that cars were in such poor repair that it was hard to handle shipments with them. Then the general strike of shopmen made conditions worse, and today traffic conditions are about as bad as they could possibly be. However, it is believed that the situation will be much worse by fall when crops are moving unless a general shake up occurs somewhere.

* * *

The Taylor Paper Co. at Memphis, Tenn., is building a two story brick addition to its place.

The SUPERINTENDENT

Helpful Hints for Practical Men
Whose Problem is Maximum
Production With Minimum Cost

Finishing an Up-Draft Kiln

Upon finishing a scove or clamp kiln provided with temporary tops or platting of brick and ashes instead of a permanent arch, it is generally desirable (a few hours before closing the kiln) to drop a little fine coal down the flues from the openings in the top of the kiln, so as to burn the top brick to greater maturity than would otherwise result. Such kilns also give better results if the tops are covered with brick or clay in order to keep most of the heat in the kiln, provided it does not interfere too much with the draft. When the kiln is closed, the top should be made air-tight by using a platting of brick or clay.

✂ ✂ ✂

Damper Templet of Good Design

Accompanying this item will be found a few illustrations of an ingenious device developed by M. M. Minter, and which he used to great advantage in kiln construction work. There is opportunity for the use of simple little short cuts at various points in a clay plant and some men are unusually adept in finding methods to save time and labor. This is quite true of Mr. Minter who has had a great deal of experience in kiln construction. The equipment which he improvised and which is herein described is very easy to construct and costs but a trifling sum.



Damper Templet Partly Removed from Its Position in an Underground Flue. An End View of Its Construction Can Be Noted Here.

The device is used in connection with flue construction. In making allowances for the place to be occupied by a damper

in a flue or stack, a templet of some form is generally used. However, ordinarily, when the time comes to withdraw this apparatus it is usually found a very difficult operation. Most of the time the templet is held so securely by the surrounding brick work that it must be broken and taken out in pieces. Besides being a tedious job and consuming considerable time and effort, this procedure is expensive. The boards can seldom be used over again.

All of these disadvantages are overcome with the use of the apparatus designed and employed by Mr. Minter. Two long 2x4 in. pieces of timber are connected by short timber on hinges so that the long pieces always remain parallel. Smaller boards of one inch thickness are nailed on the long lumber and their edges beveled so that they will accommodate the large forms constructed of flat boards. These forms fit in the groove formed by the above construction and are held in place by wedging between them small boards as may be seen by referring to the illustration. This form



Front View of Damper Templet As It Appears When Set Up.

is set in place so that it takes the position of the damper in the flue. When the construction has been finished the wedges are simply removed and then the flat forms taken out after which the hinge arrangement permits the collapsing of the remainder of the form and permits it to be easily withdrawn.

A better idea as to the construction of this template for damper construction can be obtained by studying the accompanying photographs which show several views of this apparatus.

✂ ✂ ✂

Composition of Silica Refractories

In general, silica brick that now give satisfactory service in the United States practically all contain at least 95 per cent. of SiO_2 ; many contain at least 1.0 per cent. of Al_2O_3 , and although few brick contain much over 1.0 per cent. of Fe_2O_3 , it has been found that in certain cases at least, 1.6 per cent. did not appreciably depress the softening temperature. Most silica brick contain 1.60 to 2.0 per cent. of CaO . Consideration of the binary system CaO-SiO_2 leads one to believe that up to six

to eight per cent. of CaO the temperature of softening should not be depressed much below 1,600 deg. C. Results of our own work (Bureau of Standards) on silica brick containing such percentages of lime lead to the same conclusion.



Showing the Different Parts of the Apparatus and How the Uprights May Be Pushed Together to Facilitate Easy Removal From the Flue.

Apparently the limit of total alkalis in first grade silica brick is approximately 0.4 per cent. Increasing the total alkalis above this point seems to depress the temperature of softening proportionately. The chemical composition of the brick, however, depends primarily upon the composition of the quartzite from which it is made. The desirability depends not only upon a composition that will yield a sufficiently high softening temperature when made into brick, but also upon its physical character. The above statements are made following a research on silica refractories conducted by the Bureau of Standards, and are published in a paper recently issued by the Government.



Eliminates Stain by Weathering in Open

A strange but interesting point in connection with brick manufacture occurred some years ago when a concern making buff brick learned that the product developed a brown stain when the raw clay was stored under dry cover. The experiment of turning out the clay into the open was tried, and the brown stain disappeared. So far as was learned, storing under dry cover increased the stain rather than diminished it.



Foreign Markets for Clay Products

There will be a demand for fire brick in the next few years in the Nanking consular district, according to Vice Consul Samuel Sokobin, of Nanking, as large iron deposits within a few miles of Nanking are to be developed, and it is reported that a small start will be made next year, and that furnaces will be erected at Pukow, the terminus of the Tientsin Pukow Railroad, on the Yangtze, opposite the city of Nanking. The Nanking consular district is a large agricultural area, with a population of between 50,000,000 and 60,000,000 people, and there are very few industries in the district requiring clay products at present.

There are no glass works in the district, nor in all China,

but it is believed that glass works will be established in the coming industrial development. China imports about \$2,000,000 worth of glass and glassware annually.

Another product for which there should be a large demand in the future is sewer pipe. At present there are absolutely no sewerage systems in China, but with the establishment of schools the knowledge of hygiene and sanitation is increasing and will result in the introduction of modern methods of dealing with problems of community health.

The chief user of fire brick in this district is probably the Tientsin Pukow Railroad, the office of the purchasing agent being in Tientsin, China.

JAPAN USES LARGE QUANTITIES OF FIRE BRICK

Large quantities of fire brick and fire clays are used in Japan, according to Consul Robert Frazer, Jr., of Kobe. The greater part of the demand is for fire brick for use in steel works, glass factories, porcelain works, cement kilns, copper and zinc smelters, etc. This demand is partially filled by the local producers of fire brick, altho considerable quantities are also imported annually. Over 100,000,000 fire brick are produced in Japan each year, while the importation amounts to a little over 1,000,000 brick. The importation into Kobe and Osaka in 1917 amounted to about 200,000 brick, valued at \$46,926.

A local importer of such lines stated that the ordinary fire brick, such as is used in setting boilers, lining cement kilns, steel furnaces, and stacks for copper and zinc smelters, etc., is almost entirely of domestic manufacture, but that special fire brick is sometimes imported for specific purposes. The foreign machinery importing houses also usually import the special brick used in the installation of the plants which they erect. About 65 per cent. of such imports in 1917 came from the United States, while 25 per cent. came from China, 8 per cent. from Sweden, and 2 per cent. from Great Britain.

Domestic fire brick (which is said to be of really good quality) sells at from 15 to 20 sen (7½ to 10 cents) each. Imported brick has to bear transcontinental freights, trans-Pacific freights, and the Japanese import duty. Supposing that brick sells at 5 cents each f. o. b. city of shipment and that freight costs to Japan were \$32.50 per ton of 250 brick (a very low freight estimate in these days), the cost of one brick laid down in Japan would be approximately 21.3 cents, including the duty, which is 17 cents per 100 pounds. The imported brick, then, would have to sell in Japan at from 45 to 50 sen each in order to make a profit. Until conditions change materially, therefore, it is best for exporters to confine their attention to special grades.



Canada Issues Clay Products Report

The annual report on the mineral production of Canada during the calendar year 1917, has just been issued by the Canada Department of Mines, Ottawa, Ont. Included in this book is a chapter on clay products, giving statistics of great interest to Canadian clay products manufacturers in particular. The value of production in 1917 was increased by 16 per cent. over that of 1916. However, the production in 1917 was only 45 per cent. of the maximum production which was reached in 1912. Of the total value of sales in 1917, building brick and fireproofing contributed about 64.8 per cent.



A clay products company has recently been organized in Kaiuan, Manchuria, with a capital of \$50,000, for the manufacture of brick.

IN *the* WAKE *of the* NEWS

Being a Brief Mention of a Host of Interesting Happenings in the Varied Fields of the Clayworking Industry

Personal

A. F. Greaves-Walker, a well known name in the clay industry, is planning on a three months trip to the Pacific Coast and Alaska.

Charles E. McCammon, prominent member of the firm of L. H. McCammon & Bros., dealers in clay products, Cincinnati, Ohio, died recently at his home in Cincinnati.

Charles Frank, sales manager of the Nelsonville Brick Co., of Columbus, was called to Huntington and St. Albans, W. Va., recently to look after several street paving awards.

LeRoy Gaddis, of the Gaddis-Harrison Co., brick and clay products jobbers, of Columbus, Ohio, has returned from a 1,600-mile automobile trip with his family. He visited Philadelphia, New York and Buffalo.

George E. Hoffman, secretary of the Monument Pottery Co., Trenton, N. J., manufacturer of sanitary earthenware, has returned from a trip to Seattle, Wash., made in the interests of his company.

H. S. Dering, of the retail brick firm of Dering & Oliver, of Peoria, Ill., was a business visitor in Columbus the latter part of August. While in Columbus he visited the Claycraft Brick Co., which recently furnished face brick for a large building in Peoria.

Lieutenant Stuart Clink, formerly with the Barkwill-Farr Co., and for the last sixteen months in war service in France, has returned from abroad, and is mentioned for a special position with the Cuyahoga Builders Supply Co., Cleveland.

Wm. P. West, retail sales manager of the Ironclay Brick Co., Columbus, Ohio, has resigned to accept a position in the sales department of the Columbus Contractors Supply Co. Mr. West has been with the Ironclay Brick Co. for eight years and has a wide acquaintance among contractors and builders thruout the state.

J. E. Morrissey, of the Cleveland Builders' Supply Co., of Cleveland, Ohio, was a business visitor in Columbus last week. While in the city he was taken to the brick plant of the Hocking Valley Products Co., located at Greendale, by H. F. White, sales manager of the last named concern.

Emmet Howard, president of the Columbus Brick Co., visited a number of face brick plants in the Hocking Valley district recently. He reports that conditions at all of the plants are about the same, with both car shortage and labor shortage reducing the output to between 45 and 50 per cent. of capacity.

E. O. King, factory foreman of the Baltimore plant of the American Refractories Co., has left for Cerro de Pasco, Peru, South America, to build a new clayworking plant for the Cerro de Pasco Copper Co. He also becomes manager of their entire clayworking operations. This includes refractories, hollow ware and building brick for their own use.

John Stamm, general manager of the plant of the United States Pottery Co., at Wellsville, Ohio, but a resident of

East Liverpool, has been nominated by the Republican party of that place as its candidate at the November election for City Treasurer. Mr. Stamm is prominently identified with the Masonic fraternity of Eastern Ohio, and is one of the most widely known ceramists in the industry.

W. T. Duggan, formerly sales manager of the Cleveland (Ohio) Builders Supply Co., and now vice-president and general manager of the Liberty Ship Building and Transportation Co., announces now why he has been passing the cigars around the Leader-News Building and up on the lake front of late. This time it is another girl, which makes a quartet of the same at the Duggan household. The newcomer made her debut August 2. William, Jr., still holds leading position in the aforesaid Duggan domicile, however.

California

The Celite Products Co. recently closed a contract with the Standard Oil Co. for insulating brick to be used in the immense rotary kiln at the Richmond, Cal., plant.

The California-Hawaiian Sugar Refining Co. is about to resume the construction of an immense warehouse at Crockett, Cal., which will require in the neighborhood of 2,000,000 brick.

The lowest bid of \$6,300 was made by the E. K. Nelson Building Co. for the construction work on a one-story brick machine shop to be erected at Polk street and Cedar avenue, San Francisco.

According to the latest reports from the Lincoln, Cal., plant of Gladding, McBean & Co., complete operation of the factory is to be resumed about the first of September. At present the concern is waiting for the last batch of machinery to arrive for installation.

The Inland Empire Pottery Co. is the name of a new industry recently established at Spokane, Wash. The president of the company, G. E. Wyne and his associates operated a small pottery in the state before the war and upon his return from overseas duty, he established a plant at Spokane with a force of about 20 men. The concern manufactures stoneware of all sorts, jugs, flower pots, etc. The clay used in the factory at Spokane is secured from Clayton. An exhibit of the company's products has been placed in the display rooms of the Chamber of Commerce.

The San Rafael plant of the McNear Brick Co., is now in operation after six months of inactivity and is working at full capacity in order to fill a number of large contracts recently closed. Among the principal contracts is the furnishing of 1,000,000 brick for the construction of a new twelve-story class A office building to be erected at the southeast corner of California and Sansome streets, San Francisco, for Balfour, Guthrie & Co. The estimated cost of this fine structure is \$750,000 and it will occupy a ground area of nearly 12,000 square feet. In preparing the plans, provision has been made for the addition of three stories.

It is also rumored that the Federal Reserve Bank of San Francisco is to resume construction within the next sixty days and about 1,000,000 brick will be needed for this job.

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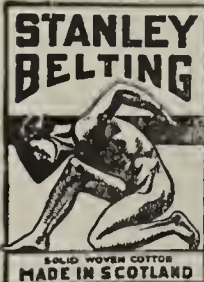
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In addition to the particularly large contracts in view, many apartments in San Francisco are now under way or contemplated with plans calling for from 150,000 to 400,000 brick each.

It is said that Lingren & Co., San Francisco contracting firm, is contemplating the rearing of a large warehouse in this city in which over 1,000,000 brick will be used. According to present plans, the construction work on this enterprise will commence not later than the first of October.

Colorado

It is said that Harry J. Finley, a St. Louis lawyer, proposes to finance a brick plant to be constructed in Ft. Collins, Colo.

Frank C. Helwig, who for the past few years has been manager of the Trinidad (Colo.) Brick and Tile Co., has resigned and will remove to Pueblo to make his home. He will be succeeded by Fred C. Nichols, who has been traveling engineer for the Great Western Sugar Co., of Denver.

The Grand Junction (Colo.) Brick & Tile Co., which was recently organized with a capitalization of \$50,000, is busy putting its plant into shape preparatory to manufacturing brick, which will commence very soon. Among the new equipment installed are two pug mills, a repress and a crusher.

The Van Briggie Pottery plant, at Colorado Springs, Colo., which was partially destroyed by fire last month, has been entirely rebuilt and in another week or two there will be no indication that a fire ever took place, for the old style of architecture has been followed out very closely in the reconstruction of the plant.

Delaware

The Lehigh Brick & Rock Products Co., Wilmington, Del., has filed articles of incorporation with capital of \$200,000, to operate a brick plant in Lehigh County, Pennsylvania. The local incorporators are G. H. Reed, S. D. Townsend and M. M. Toner.

The Delaware Terra Cotta Co., Shipley Street, Wilmington, Del., brick manufacturers, are experiencing a good call for material at the present time. The company specializes in a rough hard brick, as well as a salmon brick, the latter selling at around \$17.00 per thousand, with the better grade material selling at \$20.00; sewer pipe is also handled. With the convenient location of this yard in the city, the question of delivery to jobs is a simple matter.

Restriction in construction work at Wilmington is being brought about thru labor difficulties, and while the situation as it stands is not so bad, yet the threatened action of bricklayers and others engaged in the building trades is tending to make for indefinite conditions in the future. Contracting bricklayers have received a demand from their employes for an increase of 40 cents an hour: hodcarriers are asking \$6.00 a day, while plasterers are demanding \$8.00 a day, an advance of \$2.00 over the present wage scale, effective September 1. Carpenters have submitted a schedule to employers covering present living expenses in an effort to advance the present wages.

The call for basic building materials of all kinds at Wilmington is on the increase. Local supply dealers are considerably encouraged over the outlook, and believe that a splendid fall season is in sight. Common brick is in good demand for local and neighboring work, and face brick is working around to a point of prominent call.

for anticipated operations. Hollow tile, which is a popular local material, is finding a ready market, as are other burned clay specialties. Prices are holding firm and there is no immediate evidence of any important change; common brick, good quality, is selling for around \$20.00, delivered on the job, while fire brick is quoted near the \$70.00 mark.

Building operations are taking an encouraging turn in the Wilmington district. The improvement in construction work during the past few weeks is continuing and all indications point to a rapid resumption of extensive activities in this direction. Industrial work is coming to the forefront, while a number of good sized operations in housing work are reported. The Bond Manufacturing Co. has filed plans for the erection of its proposed new machine shop at Fourteenth and Locust Streets, to cost about \$42,500; a new school building to cost approximately \$500,000 will be erected by the Tower Hill School Board in the Tower Hill section of the city, while nineteen new houses to cost approximately \$83,000 will be constructed by Joyce & Kerrigan on Shallcross Avenue, Harrison Street and Lovering Avenue.

Georgia

Macon, Ga., reports the incorporation of the Findlay Brick Co., with \$100,000 capital stock, which will establish a large brick plant in that city.

Idaho

According to reports, J. W. Faubion, who operates a small soft mud brick plant in Nampa, Idaho, plans on erecting a building and putting in modern brickmaking machinery this fall when the present rush of orders slackens up.

Illinois

C. A. Zander, who recently purchased the brick and tile plant of Price and Gunning, at Macomb, Ill., is busily engaged putting his plant in shape and is preparing to begin operations in the near future.

Indiana

Reports say that representatives of a large corporation have been in Brazil, Ind., recently concluding arrangements for the erection of a new clay plant there. While the name of the concern has not been made public it is understood that a million dollar plant will be erected in Brazil in the very near future to manufacture various kinds of clay products.

Iowa

All the machinery is now in place for the new plant at Sheffield, Iowa, owned by C. L. Smith and the materials are on the ground for the upright continuous kiln. It is expected that operations in the new plant will be started about August 20.

The Tramp Bros. Brick and Tile Works, located east of Creston, Iowa, suffered a fire loss recently. A considerable part of the drying shed was destroyed but the work of the fire department prevented the loss of any of the machinery. It is estimated the loss amounted to \$10,000 which is covered by insurance.

Kentucky

The Southern Brick & Tile Co., Louisville, Ky., is finding business fairly active in the brick line, and is putting in all of its spare time in manufacturing drain tile to take care of its usual fall and winter contracts.



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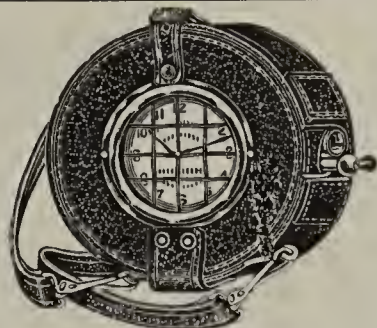
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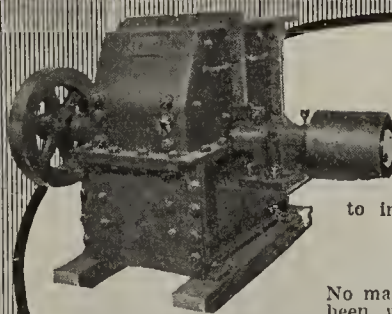
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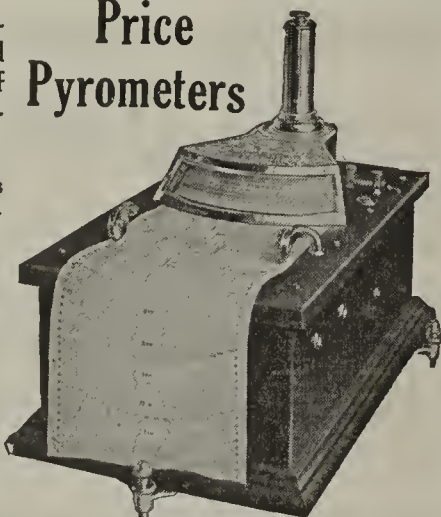
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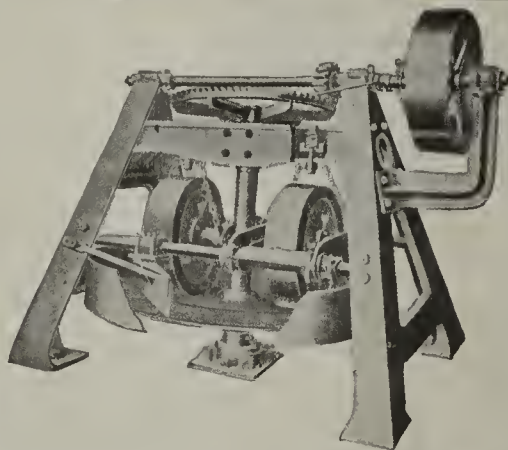
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DES MOINES
IOWA

At Lexington, Ky., Harry Cramer, of the Lexington Brick Works has several good local contracts in hand and is also making shipment on several Bluegrass jobs. The year has been a fairly good one with the company.

Hollow tile and brick contracts on the Atherton Building annex in Louisville should be placed within a few days, as the contractors are now making the necessary excavations, and concrete work will start within about two or three weeks.

The Progress Pressed Brick Co., Louisville, Ky., is now making regular local deliveries from its yards to several local jobs, and feels that it is lucky in having its own clay and plant, and not being dependent on the railroads for anything but coal.

Some price cutting has been noted in Louisville and vicinity, but as a whole dealers are well in line, and are maintaining prices nicely. Of course when someone wants business bad, and a short cut will get it, the cut is made.

James T. Howington, of the Coral Ridge Clay Products Co., in commenting on the situation said: "We are stacking up our yards with brick waiting shipment until it looks like a big jobbers yard. The car supply is simply fierce, and it looks like the condition will be still worse.

The Barbourville (Ky.) Brick Co. has had a good year, as there has been a good deal of development work in the mountain district of the state, where the Government is erecting several new Federal buildings, and where the coal companies are showing a good deal in the way of development.

At Maysville, Ky., the Sphar Brick Co., and Maysville Brick Co., were inconvenienced during the period that the C. & O., railroad was not accepting business, but still had the L. & N. branch line from the Bluegrass and the Ohio River to depend upon. Huntington, W. Va., plants had much trouble in keeping going.

At the plant of the Coral Ridge Clay Products Co., arrangements are being made for carrying a larger stock of coal in view of the difficulty expected in securing steam coal. Manager Howington expects to stock six weeks to two months' supplies. It is reported that industrial consumers in the South are stocking four months' supply.

A. P. McDonald, of the P. Bannon Pipe Co., recently returned from Lexington, where he landed some nice contracts, including a contract for hollow tile in the new million dollar Lafayette Hotel. The Lexington (Ky.) Brick Co., has the common brick order on the job, while the face brick will come from Indiana. The Phoenix Hotel has plans for a 200 room addition, but will not start work until after the fall races in September. There are two hotel projects also at Frankfort.

For several months past there have been rumors to the effect that the buildings at Camp Taylor, Ky., will be concreted or veneered. It has been announced that Camp Taylor will be a regular army post, and the First Division of the Regular Army is to be quartered there as soon as it gets home from abroad. Today the pine buildings are beginning to look weather beaten, but there is a strong chance that they will be stuccoed or veneered. If brick veneered it will be an expensive and lasting job. It will also be one of the finest advertisements for brick on record, if a camp covering many square miles is bricked in from start to finish.

In Louisville a \$1,000,000 hotel is being projected by members of the Market Street Merchants' Association, who believe that a hotel is needed, and that it will aid in holding business on the oldest retail street in that city. The

old Galt House, an old timer of solid masonry construction, has been sold and closed, resulting in need for a popular priced hotel in that section. The merchants are forming a realty company to handle the proposition and will subscribe for its stock. A fine new warehouse building will be erected on the old Galt House site and that of adjoining buildings by the Belknap Hardware & Mfg. Co., which will use brick construction over concrete.

There has been some improvement shown in building operations in Louisville during August, resulting in a much better demand for brick which has resulted in inquiries being really heavy with some houses. Several brick manufacturers of the district are working at capacity, and report that orders are equal to production at the present time in more than one plant. August so far has proven the best month of the year from the point of demand. However, there is always something to take the joy out of life, that present something being a severe car shortage which is resulting in some concerns not being able to ship much better than twenty per cent. of their business that is waiting.

J. H. Bell, sales manager of the Louisville (Ky.) Fire Brick Works, in discussing the situation said: "Labor troubles have caused us a lot of trouble. The strikes of shopmen resulted in the Chessapeake & Ohio R. R., refusing to handle any shipments over its lines. Our Carter County, Ky., plant was closed down as we couldn't get coal or supplies in, and brick out. Other plants on the C. & O. at various points were down. Our plants resumed operations on Saturday, Aug. 16, after being out for more than a week. The Louisville plant has been running full, but is now blocked with a short car supply. For the first sixteen days of this month we received just 23 cars, whereas we need five or six a day, or between eighty and ninety. We secured about twenty-five per cent. of actual requirements. The demand for fire brick is not so very good due to labor troubles in the East, and on several big orders shipments have been held up due to strikes in eastern plants. If the labor and car troubles are ever settled we should have good business."

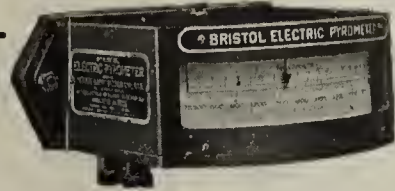
Maine

Contracts will be let soon at Portland, Me., for a considerable amount of new sewers. Lines are to be laid in Vincent street, Ocean avenue and Thompson street.

Maryland

Baltimore is certainly showing that it "knows now," when it comes to building operations, and the movement for new construction shows no signs of abatement. Everybody in this line is busy in this district, and the trend of affairs is surely in the right direction. Housing work is a big issue, and no time is being lost in the matter of building new houses to provide for the ever-increasing demand. Industrial work, also, is not so very far behind and a number of interesting projects in this line have developed during the past fortnight.

The Baltimore Brick Co. is experiencing a good demand for its well known product. Common brick is now selling for around \$15.00 and \$16.00 per thousand at the yard, while a Colonial brick turned out by the company is quoted at \$25.00 per thousand. The company does not own its truck, but has arranged a plan for hiring such trucks as required, and it has proved very successful. A large quantity of brick from this yard is being furnished for a number of important housing operations which have recently developed, and material in good sized shipments



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They measure up to the high standard maintained by Bristol's Instruments for over a quarter of a century.

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THE BRISTOL CO., Waterbury, Conn.

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"Good as Ever" after 2½ years' service

On September 7, 1916, we shipped some of our No. 18 Union Steel Chain Belting, which operates on standard No. 88 sprockets, to the Haviland Clay Works, Haviland, Ohio. On March 5, 1919, we shipped them new pins for this chain, and have just received their letter, stating:

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You can do it with the sure, steady output, rugged construction and high power of

Bucyrus Revolving Shovels

A BUCYRUS can improve the quality of your brick by obtaining a more thorough mixture of your bank from top to bottom. It can cut your costs and increase your output.

Let our representative look over your property and tell you how.

All sizes of revolving and standard railroad type shovels and drag-line excavators.

BUCYRUS COMPANY
SO. MILWAUKEE, WIS.

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Portland, Ore., San Francisco

109

has been used in a new residential section known as Guilford.

The price situation as regards standard building specialties at Baltimore remains stationary, and no noticeable fluctuations have occurred, excepting in the matter of brick, which is showing a trend to a higher level in company with increased demand. About \$16.00 per thousand is the average price now quoted for good grade material, and \$18.00 delivered on the job. Hollow tile is selling in good quantities, as are other burned clay specialties. Fire brick is holding well in the neighborhood of \$75.00 per thousand. The supply of materials is good and equal to the call, and those in the trade in the wide run are preparing for an active fall season.

A mid-summer meeting of secretaries of Builders' Exchanges was recently held at Baltimore, and proved to be one of the most successful gatherings of its kind. It was pointed out in a number of reports by those assembled that building operations now under way throughout the country are greater in volume than can be handled successfully and with the desired dispatch under the prevailing conditions as found in different sections. In the Middle West and South, it was set forth, there is a noticeable shortage of men and materials, and many contractors report that they are not able to take on additional work at the present time, and which is unprecedented in volume.

In discussing the present labor situation, a prominent official of the Baltimore Builders' Exchange says that it is a great pity that labor troubles should threaten just at a time when the city is going ahead, both in business and industrial activity. Labor, it is set forth, is a marketable commodity, just as everything else, and is regulated by the supply and demand; labor prices will adjust themselves if the agitator keeps hands off, and while the right of any man to want and demand more money is not denied, this should be done in a manner so as not to stifle industry. In Baltimore there is a prospect that the demand will far out distance the supply, if there is no stumbling block placed in the way, and the surest way of erecting such a stumbling block is to create the impression that labor is apt to be unreasonable in its expectations.

A brief survey of current construction work in the Baltimore district shows the exceptional popularity of brick as a material for permanent and reliable erection. The majority of new homes now being built, or to be erected are of this type of construction. These include 9 residences on Seventh and Franklin Streets, to be constructed by James F. Klecka; 11 residences on Piedmont Avenue, to be constructed by the Northern Engineering & Construction Co.; 6 residences, to cost \$35,000, near Lake Montebelle, to be erected by John A. Graham, and 12 homes on Edmondson Street, to be constructed by Charles Herbold & Son, at a cost of \$40,000. The Hotel Caswell Co. is having plans prepared for the construction of an addition to its building at Baltimore and Hanover Streets, to cost about \$500,000. All this work calls for brick and hollow tile, so it is no wonder that local dealers and manufacturers are active.

Massachusetts

The Gruebite Co. has been incorporated at Boston to manufacture and deal in clay products. The incorporators are William H. Grueby, James M. Curley and Vassar Pierce, all of Boston. The corporation has a capital of \$75,000.

The long forecasted increase in price of brick in Boston, delivered on the job, has taken place and dealers are now quoting \$19. The demand is showing some increase also but few are willing to say that business is brisk. Increased wages for brick yard workers is mainly responsible for the higher price.

Announcement is made in New York brick circles of the acquisition of the brick manufacturing plant at Otter River, Mass., by new interests, which have organized under the name of the Otter River Brick Co., to run the yard. This property was previously operated by Edward F. Fish, who died recently, and comprises a main molding works, kiln, dryhouse, blacksmith shop and camp building. It is valued at about \$10,000. The new company has inaugurated production with about 30 men, and is planning to increase this number at an early date. Extensive plans for production are in view.

The plant of the Otter River Brick Co. at Gardner, Mass., one of the largest brickyards in central Massachusetts, has been purchased by D. H. Morse of Gardner from the estate of Edward B. Fish who operated it up until the time of his death about a month ago. The Otter River plant was owned for a number of years by Charles H. Leathe who sold the business to Fish some time ago. The company at present employs about 25 men but Mr. Morse plans to increase the force at once in order that he may meet the increasing demands for his output. He will continue business under the old name of the Otter River Brick Co.

E. L. Cook who operates a large brick yard at State Farm, Mass., is experiencing some difficulty in obtaining sufficient help for his establishment. He has been offering bonuses to men with families who will be willing to take boarders. The Cook plant, which is located in the town of Titicut, 31 miles south of Boston, is one of the most modern in the vicinity and is equipped with steam shovel, cable conveyors, steam dryer and other improved machinery. Mr. Cook is finding little difficulty in disposing of his output.

Michigan

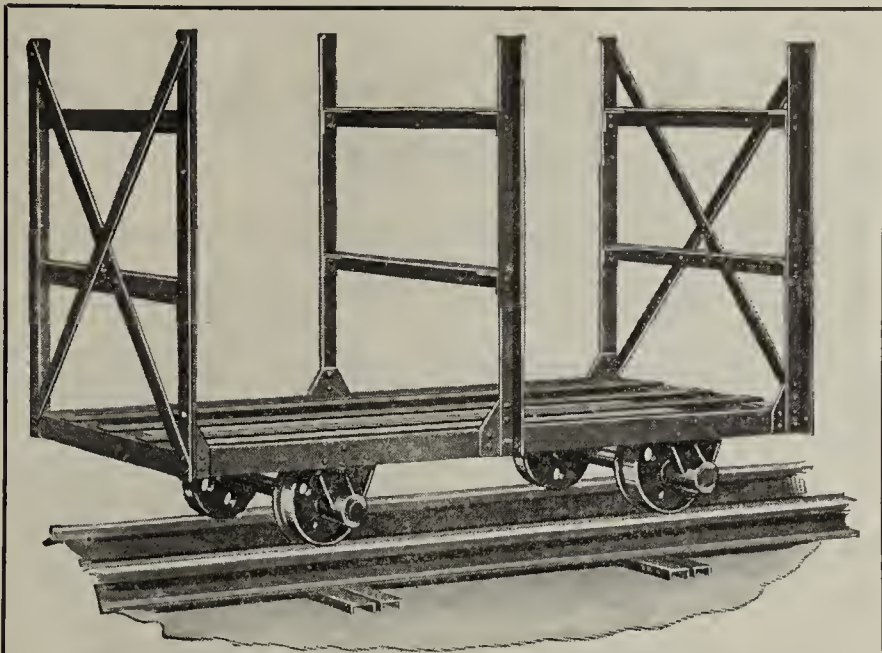
A permit has been granted to Isaac Ogooshevitz to build a \$10,000 factory for brick manufacturing purposes in Detroit, Mich.

A permit for the erection of a \$25,000 brick plant at Davison Boulevard, near Dequindre St., near Detroit, was granted to the city of Highland Park.

Julius Ritten, Ernest Bergman, S. Camenezky and others have incorporated the Warren Brick and Tile Manufacturing Co., at Detroit, Mich., with a capital stock of \$50,000 to manufacture and deal in brick, tile, and other building supplies.

Negotiations on a deal between Detroit parties and Larenson Lawrenson, owner of the Addison Junction (Mich.) Brick and Tile Co., are being made which will again put the plant in operation following an idleness of twelve years. In former years the pay roll of this factory included a force of thirty-five men.

At the rate building permits were taken out in Detroit during the first week in August, the month is likely to be one of the largest in construction work the city has had in several years. For the week, permits for new buildings and additions totaled \$2,377,035, as compared with \$207,035 for the corresponding week in August, 1918, and as against \$1,860,180 for the last week of July, 1919. July was a "hummer" in construction work, the total being \$7,000,000, yet \$10,000,000 is the figure expected for the present month. It is known that several big jobs are ready to be announced



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Canton Rocking and Dumping Grates in your plant mean a large saving in fuel, or a greatly increased production with the same amount of fuel. By improving combustion, they make a coal saving of at least 10% in comparison with stationary grates. Peak loads can be maintained easily.

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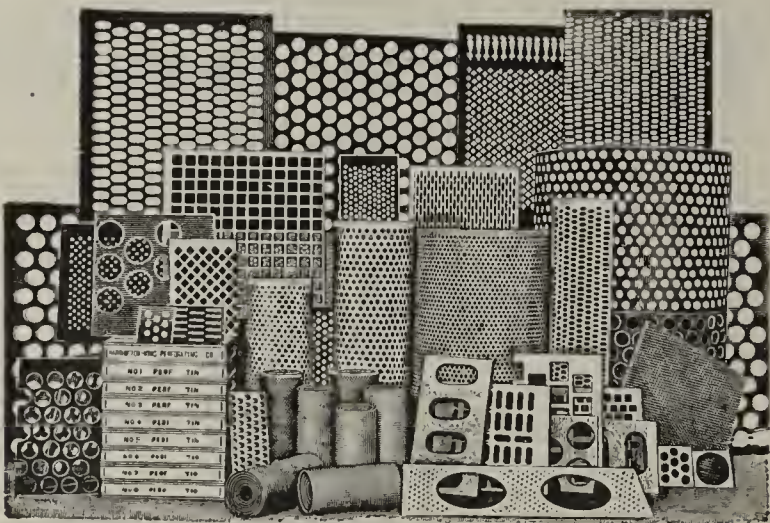
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You can safely guarantee that your brick
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You can get a higher price and influence
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Efflorescence is prevented absolutely.

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and that several are to be enlargements of automobile and parts making plants. During the week referred to contracts awarded included the following: Power house for the Charles B. Bohn Foundry Co.; one-story warehouse for Murray W. Sales & Co.; a number of factory alterations of a minor character and several contracts for large stores. Permits for the erection of four factory buildings appear in the list for the week.

Mississippi

Currie-Finch Brick and Lumber Co. at Gowdy, Miss. are operating some new brick kilns at that point.

Missouri

The City Council of Columbia, Mo., has adopted an ordinance ordering a special election September 2 for the purpose of voting on a bond issue of \$128,000 to improve and enlarge the present sewer system. Sentiment virtually assures the project, it is said.

The Lyle Rock Co., of Kansas City, Mo., was ordered recently to remove its works, upon complaint of residents in its neighborhood. The plant was located where it is now long before that part of the city was built up. It is not stated where the new brick plant will be built.

St. Louis brick manufacturers are beginning to feel some relief in shipping conditions following tie-ups resulting from railroad workers' strikes. Shipments to and from St. Louis were at a standstill for several days and manufacturers were unable to keep out-of-town orders moving to get sufficient supplies. While freight is now being moved as rapidly as possible, it will take a week or more to assure anything like regular service.

Announcement has been made by Edgar Gengenbach, industrial commissioner of the St. Louis Chamber of Commerce, of the closing of a deal by Garrett & Co., of New York, manufacturers of Virginia Dare wine, for a \$500,000 non-intoxicating wine factory in the vicinity of Natural Bridge Road and Union Boulevard, the first of three deals under negotiation with nationally known soft drink manufacturers. The tract acquired by Garrett & Co., Mr. Gengenbach said, was a five-acre site on which a brick building of several stories will be erected. The company, it is said, has perfected a new process for extracting the alcohol from the wine, and it will be an important and valuable by-product.

The immediate establishment of joint rail and river rates by way of Memphis to the southeast and southwest is demanded by P. W. Coyle, traffic manager of the St. Louis Chamber of Commerce, in a letter to the United States Railroad Administration. For many months St. Louis brick manufacturers have sought the establishment of such rate so that thru the Mississippi River barge lines a vast territory, where much building is anticipated, might be opened to them. They have been unable to compete to a great extent with southern dealers owing to complicated and uncertain shipping. Joint rail and river rates for cities on the lower Mississippi have been denied by the government on the ground that many cities, especially Memphis, did not have the terminal capacity to care for the increased business that would result. Mr. Coyle's demand was inspired by a statement of M. J. Sanders, federal manager of the Mississippi-Warrior Waterways, who was in St. Louis recently, that the government was now ready "to try Memphis."

The final contracts for the erection of the large plant of the General Motors Co. of Detroit have been awarded,

and St. Louis material manufacturers are angling for orders from the George A. Fuller Co., the successful contracting firm. The Fuller company, a New York concern, established a branch in St. Louis two years ago. Several orders for materials have been placed but the names of the manufacturers are withheld. Three buildings will be erected. The Chevrolet unit of the plant will be completed January 1, 1920, and the Buick unit will be ready three months later. The administration building will open July 1, next. Without equipment the total cost of the three buildings will be between \$1,500,000 and \$2,000,000. Machinery, sprinkler system, etc., will add another \$1,500,000 to the cost. The General Motors Co. purchased the 105-acre tract at Natural Bridge Road and Union Boulevard several months ago at a cost of \$750,000. The three buildings will have a frontage of 680 feet on Union Boulevard and a depth of 760 feet on Natural bridge road, covering 20 acres. They will be seven stories high. W. H. Kilpatrick, works superintendent of the General Motors Co., said that the plant will be the largest assembling plant in the world. St. Louis was chosen, he stated, because its freight rates were more favorable for the automobile industry than any other city in the United States. He said that he received bids from nearly all the reputable contracting firms in St. Louis and decried the idea that that city had no contracting firms large enough to handle the work. He paid a high tribute to the standing and integrity of St. Louis contractors, adding that he was highly pleased with the spirit of cooperation shown by them even after the main contract was awarded. He said that the majority of firms that bid were capable of handling the project, but that the Fuller company had won the contract on a competitive basis. The Thomas J. Sheehan Co. was awarded the large plumbing contract, including the three buildings. The work will call for a large sewerage system that will mean orders for sewer pipe manufacturers.

New Jersey

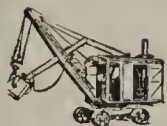
Rutgers College, New Brunswick, N. J., is looking for an increased registration for the coming college year. It is believed that many young men who left college to enter the army or navy service, will return to school as the season opens. Estimating the anticipated enrollment in the senior, junior and sophomore classes, with the proposed large freshman class, the school bids fair to have a student body aggregating close to 500. George A. Brown, head of the Department of Ceramics at the College, left for a week's vacation in Michigan on August 19. Professor Brown is planning for extensive activities in his department during the coming school year.

Mason material dealers in New Jersey report an increasing demand for hollow building tile, and all grades of material of this character in different sizes are operating under active call. It is held that the reason for this growing popularity is on account of the scarcity of really good brick and the high prices now prevailing for this commodity; again, hollow tile presents exceptional economy and facility in handling and laying. Building blocks and partition tile are now being placed to service in all classes of construction in different parts of the state, including large and small residences, factories, garages, barns, and other structures.

The brick plants at Trenton, N. J., are busy. There is no let-up in production and every effort is being made to get the best out of the season's run. The Trent Brick Co. is enjoying a fine business for its production, and a

The ERIE is very speedy, because of its simple control. Only 3 levers.

"You couldn't make the Erie any better"



Serves either as steam shovel or as locomotive crane, with clamshell bucket.



"Our ERIE is doing well against all kinds of digging, hard and soft. I have had lots of steam-shovel experience, and I do not see how you could make the ERIE any better!"—R. T. Kyle, Supt., Huntington Clay Products Co., Barboursville, W. Va.

That's just what you hear from every man who has had plenty of steam-shovel experience. The ERIE is built with extra strength. It operates with practically no repair expense. You can *DEPEND* on the ERIE.

We would like to send you a Bulletin showing just what the ERIE Shovel can do. Write for a copy of Bulletin B. Address.

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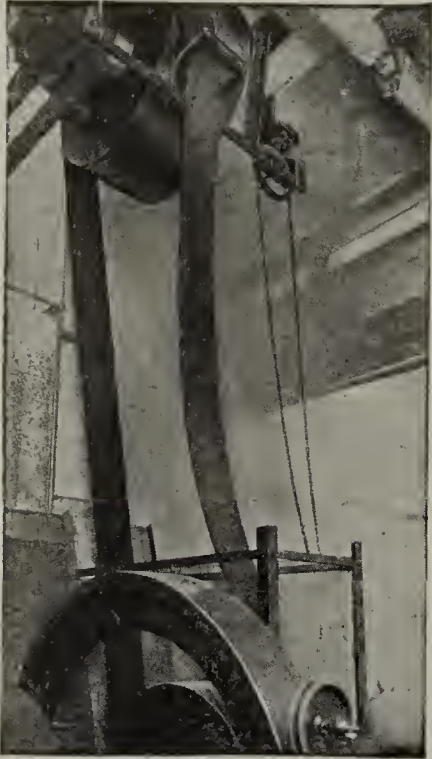
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12

good grade of material is being turned out. Donahoe & Nolan, and Joseph H. Applegate are also producing at a good rate of manufacture. The Independent Brick Co., with plant at Bordentown, near Trenton, is maintaining operations at regular capacity at its two plants and is finding no difficulty in securing orders for material. This company suffered a slight fire loss, aggregating about \$10,000, at its No. 2 plant, near Fieldsboro, August 12, when the engine house and sheds at the yard were damaged.

The one disturbing factor in the building situation in New Jersey, and similar to conditions as found in other parts of the country, is labor. There is seemingly no end to the demands of skilled and common workmen; wages are mounting and hours are being lowered, while there is an increasing scarcity of unskilled labor, and particularly in the matter of bricklayers' laborers. These men, evidently, are returning to their native lands, and such help as can be obtained for this class of work is, on the whole, not very reliable. Again, the decrease in hours is showing its effects with slower progress in construction; where a bricklayer used to lay 1,500 brick on an average in a day, from 900 to 1,000 is now the current number, and the same applies with other features of building. At Newark, as well as in other parts of the state, there is a strong sentiment among the building unions at the present time to have a flat wage scale of one dollar an hour for all skilled labor, with a flat 44-hour week.

There is a good market for building materials of all kinds in the Raritan River section of New Jersey these days, and particularly for burned clay products. Considerable new construction work is now under way at Perth Amboy, Metuchen, South Amboy, Keyport and other towns in this district. A "Build Now" campaign, recently organized, has been instrumental for considerable good in this direction, serving to inspire prospective builders with the advantage of building while materials can be secured, for there is no telling where the supply will be if the demand grows in greater volume. Ceramic interests have been active in the support of this movement, including the Sayre & Fisher Co., the New Jersey Terra Cotta Co. and the Fords Porcelain Works. Several meetings have been held recently regarding the proposed Intra-Coastal Ship Canal, commonly known as the New Jersey Ship Canal, and local ceramic concerns are strong in their encouragement of this enterprise. If carried thru, as now anticipated, it will help to "boom" the Raritan River section to a great extent, and make better known the industrial advantages of this region.

To show the trend of construction work in New Jersey, it is interesting to note that three large hotels are now planned at Trenton, Wildwood and Ocean City. The first mentioned, the Stacy-Trent at Trenton, will be in course of erection at an early date; plans have been completed, and bids for construction will be asked with the turn of September. The structure will represent a total investment of close to \$1,000,000, and pottery interests in this city have been active in support of the project; its success is now assured. The new hotels at Wildwood and Ocean City are estimated to cost like amounts; the city officials of both communities are interested in the projects. The biggest apartment house in the state is to be erected on Johnson Avenue, near Clinton Avenue, Newark, by the Sharff Construction Co., at an estimated cost of \$300,000. The building will be of brick and other fire-proof construction, with tapestry brick finish and limestone trim.

SAUERMAN DRAG LINE CABLEWAY EXCAVATOR

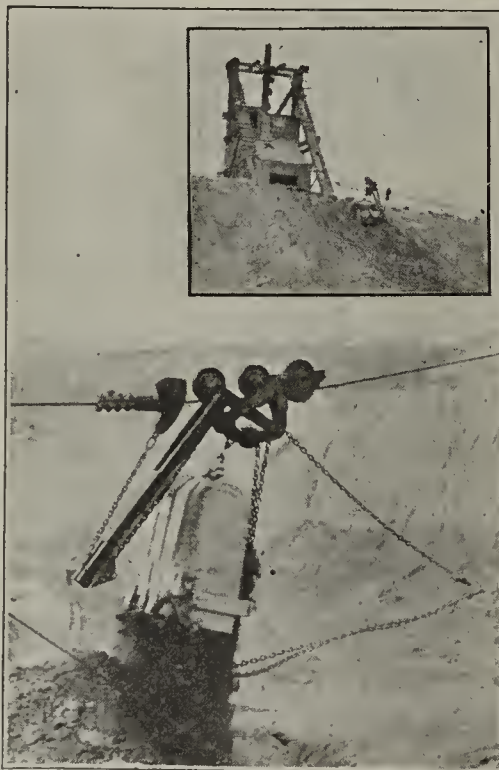
Is a one-man machine which connects the clay pit with the plant and digs, conveys and dumps the clay in one continuous operation. It does away with the shoveling gang and the cars, locomotive, track, etc., that are required when other kinds of excavating machines are used.

Here's Example of Economy of Sauerman Outfit in Clay Plant:

The problem confronting one large Ohio brick manufacturer was to find the most economical means of getting the clay from a large hill and delivering to the plant situated in the valley. The method first tried out involved the use of a steam shovel with cars and horses to haul the clay to the plant and required the employment of six to eight men.

The Sauerman outfit which has taken the place of the shovel and cars, digs the clay from the hill and conveys it to a hopper from which a car runs up and down a short incline to the plant. Two men constitute the entire operating force.

The small picture shows the bucket digging a load near the top of the hill. The bucket loads in a few seconds, then the drum carrying the load cable is released by the operator of the double-drum friction hoist on the hill-top and the loaded bucket returns down the track cable by gravity to the hopper 500 ft. away in the valley. The large view shows the quick, sure, automatic dumping action of the bucket.



This low-end dump type of installation has proved to be a perfect solution of this clay-digging problem. Our other type of outfit, dumping at high end of cableway, is equally successful where the clay has to be delivered to a point higher than the place of digging. What is your problem?

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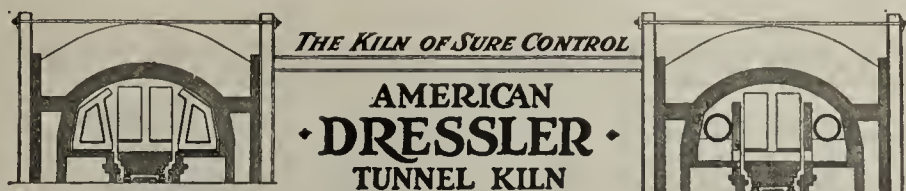
Mfrs. Cableway Excavators, Power Scrapers and Cableway Accessories

The Bloomfield Clay Co., Metuchen, N. J., with properties at Bonhamtown, is operating to the point that labor is procurable, or as Charles A. Bloomfield, head of the company, puts it, "I have about 20 men at the clay mines and could easily keep 100 busy." There is a fine call for material, and this company is still serving the same concerns as were on its books twenty-five and more years ago. Common labor is now receiving 42 cents an hour thruout this section and cannot be obtained for that, and simply because it is not available. There is a great shortage at the present time, with no aspect, whatever, of any early relief. In discussing this situation, Mr. Bloomfield says that the only answer is in the installation of new machinery of all kinds for hoisting and other operations that will alleviate the demand for men, and he is planning to make necessary improvements at his properties in this direction at an early date. Skilled labor in these parts is quite plentiful at the present time.

The demand for common brick, face brick, hollow tile and other burned clay products is on the increase in different parts of New Jersey. Brick is a decidedly popular material in this district, and is used in all varieties for construction purposes. Prices hold up well—there is never a thought of any decline; the big thing is to get the material. At Newark good hard common brick is selling at \$19.50 per thousand, delivered on the job; at Morristown, the material is selling at around \$21.00 per thousand; dealers at Paterson are asking \$19.00, while at Trenton a figure at \$15.00 and \$16.00 is holding. In the Southern district, at Atlantic City, a price of \$18.00 obtains. Salmon brick is a little lower in quotations. Partition tile continues in price from \$100.00 upwards, according to size. Face brick holds at from \$40.00 to \$50.00 per thousand, for good grade material, while fire brick is from \$60.00 to \$70.00 per thousand, and operating under good call at the present time. Those well informed in building circles in this locality, do not believe that there is any appreciable drop in sight for standard building commodities. It is held that figures on different popular specialties are more likely to advance.

Newark, N. J., continues to make important strides in the matter of new building construction. Each week shows a gain in valuation of plans filed at the building department, and the city is more than holding its own among the eastern industrial sections. During the past fortnight permits have been issued for structures aggregating \$544,901 in valuation, as against \$330,902 for the corresponding period a year ago. Industrial operations are taking a prominent part in this work and among the new structures to be placed under way are a two-story brick factory for the New Toy Co., 219-225 Central Avenue, to cost \$108,000, and a three-story addition to the plant of the American Platinum Works, New Jersey Railroad Avenue and Oliver Street, to cost about \$100,000; this latter building will use tapestry brick and ornamental terra cotta. An interesting project is now being developed in this city, covering the erection of 22 two-family houses on the block bounded by Runyon Street, Belmont and Hillside Avenues, by the Runyon Construction Co. The dwellings will be of brick construction, faced with tapestry brick and trimmed with limestone, and are estimated to cost about \$300,000. J. B. Acocella, 9 Clinton Street, is architect for the homes.

New Jersey is holding its own in new construction activities. Cities, towns and villages thruout the state are "going to it" with a vim and all kinds of structures, from industrial plants to small dwellings, are being placed



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New York

A fine quota of cargoes of common brick is reaching the New York market from Hudson River points; the early weeks of August saw close to 100 loads enter the port, and these were rapidly absorbed. The greater part of the distribution has been in the Brooklyn district, as for some weeks past, while New Jersey has been gaining strength in demand, taking all cargoes during the first half period of the month. A few barge loads have gone to Long Island. With price holding at \$15.00 per thousand, wholesale, alongside wharf, there is every appearance that this quotation will remain unchanged thruout the remainder of the active building season. The up-state plants are coming along with the season run in good fashion, and the producers are considerably encouraged over the general trend of affairs; the demand is continuing from the New York market at a good point, and every barge load finds an immediate purchaser; labor is becoming a little easier and production is consequently running smoother.

As to be expected under the present trend of construction activities, the call for building materials in the New York district is good, with brick and burned clay products taking a leading position in the range of demand. Prices hold very firm, with slight advance here and there. Common brick is now selling at \$15.00 wholesale at the dock, as in months past, but the dealers' price has been raised from \$17.85 to \$18.15 for delivery on the job. About a year ago the price was approximately one dollar lower. Hollow tile, 4 x 12 x 12 in. is selling for \$114.75 per thousand; 6 x 12 x 12 in., \$153.00 per thousand, and 8 x 12 x 12 in., \$204.00 per thousand, with delivery on the job within a certain radius. Fire brick is quoted at \$60.50 per thousand, good grade material, delivered on the job. Face brick is coming along at a fine clip under a very active and increasing demand; the price range is from \$37.00 per thousand to about \$45.00 per thousand, including delivery on the job; reds are selling at the first noted figure, buffs at \$42.00 and grays at \$45.00.

Brick and other burned clay products continue as popular favorites in important construction work at New York and vicinity. Among the important projects which have developed calling for commodities of this nature are: A brick and limestone school on Curtis Avenue, Queens, to be known as Public School No. 57, with cost estimated at



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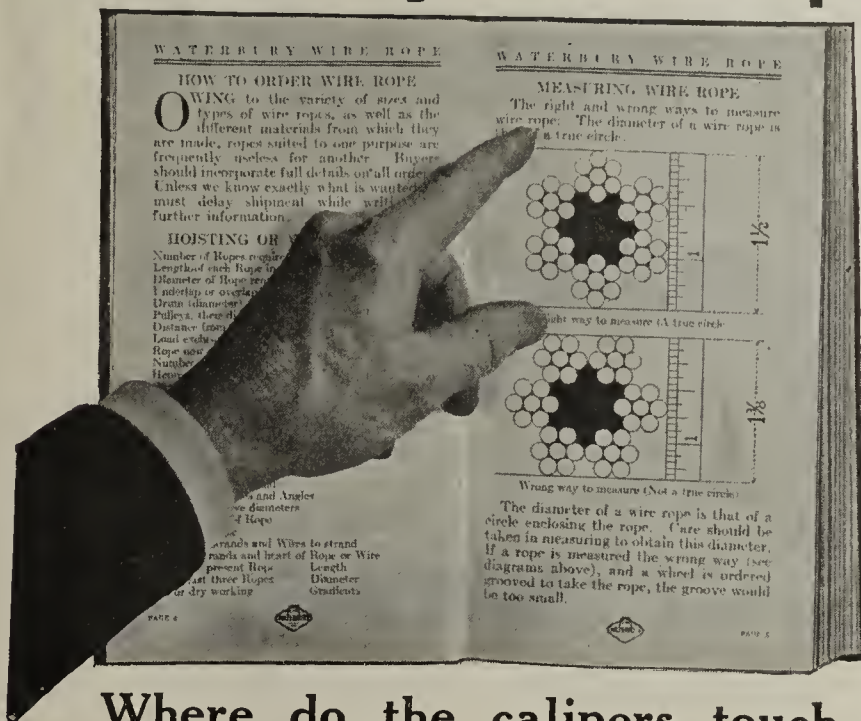
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\$200,000; a total of 600 brick residences to cost about \$7,000 each, to be erected in the Bronx by the Benseur Construction Co., Madison Avenue and Forty-second Street; a new one-story brick warehouse for the American Radiator Co., at Laurel Hill, L. I., to cost about \$100,000, and store and loft building on West Forty-first Street to cost \$600,000, this being erected by the Woodbury H. Langdon Co., 85 Liberty Street. During the past two weeks plans have been filed for the new Hotel Linnard, to be erected on Park Avenue at a cost of \$2,000,000, plans for which were prepared by Architects Warren & Wetmore, and with owner, the Linnard Corporation. The West End Corporation has filed plans for the construction of a new fourteen-story hotel on West End Avenue, to cost about \$400,000.

The Long Island Brick Co., Farmingdale, L. I., is making up for lost time at its works covering the period when the Government restricted the output of brick, and is now operating at a good rate of capacity. This plant is kept going the year around, and in normal periods has a capacity of about 30,000,000 common brick in a season. The bulk of output is used on Long Island and outside of Greater New York, as the cost of rail transportation to this latter district would be prohibitive and would not allow the company to compete consistently with the Hudson River plants, which enjoy a lower rate of haulage by means of barges. The company does a large business thru building material dealers, and also sells direct to building contractors who engage on a big scale. The company also produces a fine grade of face brick and does an extensive business in this line. For the past two years, or prior to the resumption of building work, the plant was operated at a reduced capacity, with a large part of the output used by the Government for a number of important enterprises. The company continued the production of common brick thruout the entire war period, but owing to Federal demands and conditions was unable to accumulate any supply of material. This same difficulty applies at the present time, for with the great call for brick from its regular trade there is no opportunity to develop a surplus.

Building construction continues as a big, predominating movement in New York. The way is cleared, building operators and others have become reconciled to prevailing high levels for standard materials, and structures of all kinds are in demand, so there is no other answer but to build—and this is what New York is doing. There is little or no change in the situation during the past fortnight. A multitude of new plans have appeared and architects and engineers report no let-up in forthcoming plans for new projects; the builders are busy, and estimates of cost for proposed work are high in demand. Residential work is leading in the volume of construction work, and Brooklyn is going strong in this direction, exceeding Manhattan and the other boroughs. Industrial work keeps up in the Long Island City district, and a number of large plants are now being erected in this section. Labor conditions are handicapping operations to a certain extent; certain branches of the building trades are out on strike, and this is tending to decrease current activities. The painters are out at Brooklyn, with a demand for a wage rate of \$1.00 an hour, instead of the present scale of 75 cents, with 8-hour day and 5-day week. Decorators are also on strike with a similar wage demand. In these times it seems that as soon as one trouble or strike is settled, another begins, and this is working to the detriment of building operations.

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when you measure six-strand wire rope—on the first and fourth strand, or the first and third? If wire rope is not measured correctly, the groove made for it on the pulley or drum will be too small.

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There is now a big market for these clay-product specialties. The profit is worth while. Are you going after this business?

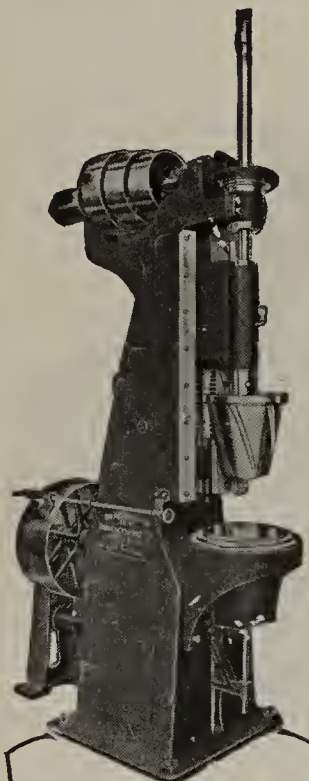
Machine fits any corner of clay room. Any laborer can operate it to capacity. Only ordinary skill is required in burning to get 100 per cent perfect ware.

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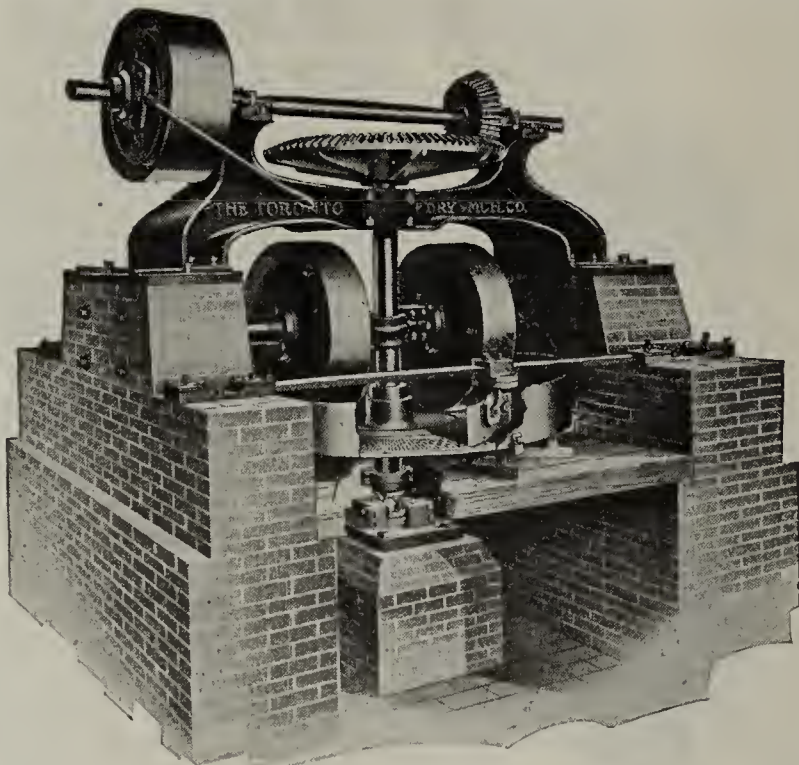
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Ohio

The Richland Shale Brick Co., of Mansfield, Ohio, has been incorporated with a capital of \$100,000 to manufacture brick and tile. The incorporators are Charles Hoffman, J. L. Stevens, G. H. Lowrey, C. E. Ozier and John H. Todd.

The Fireproof Stone Brick Co., has leased from Walter Draper a tract of property at the southeast corner of Paddock Road and the B. & O. Railroad, Cincinnati, with the privilege of purchasing at \$17,000. It is stated that a brick manufacturing plant will be constructed on the location.

One of the gratifying developments of the building situation in Columbus is the fact that builders are now getting into the game. Houses and apartments to be rented are being projected in larger numbers. Heretofore, most of the building jobs have been lot owners, who built for their own needs.

The stockholders of the Ironclay Brick Co., of Columbus, have been called into special session August 21 for the purpose of voting on the question of increasing the authorized capital from \$100,000 to \$150,000. The extra capital will be used for extensions and betterments. W. D. Brickell is president and J. M. Adams, secretary and general manager.

Joe Hurley, well known in local brick and building supply circles, has been appointed to the brick sales department by Bob Mitchell. He gave an example of what good supply means when in competition with others. At the August meeting of the Euclid Village School Board, Cleveland, he closed a contract for 150,000 brick to be used in the construction of a grammar school for that village.

If ever manufacturers of brick, particularly the face brick, were in a position to unload their product rapidly and at a fair profit now seems to be the time, and the northern Ohio district the place. Such appears to be the opinion of leading representatives of the brick and clay products industry in that territory, following a continuance of unprecedented demand that seemingly will continue to a large extent right thru the coming winter.

The largest contract awarded during the past week was that of the Columbus branch of the Timken Roller Bearing Co., to D. E. McGrath & Son. The figures were not given out, but it is announced that the buildings and equipment will mean an expenditure of \$1,000,000. A remodeling job on the Gasco Building at Chestnut and High Streets will cost \$75,000. The Columbus Union Oil Cloth Co. will build an addition at a cost of \$50,000.

Among the new corporations that were granted charters in Columbus, was that of the Lima (Ohio) Brick Co., which was incorporated with a capital of \$12,000. It is said that W. B. Kirk, was designated to incorporate the company by an outside firm and as yet it is impossible to give full details of the new firm. However, it has been announced that the brick company has purchased eighteen acres south of the State hospital grounds which will probably be the site of the new factory.

Prices for face brick in Ohio territory are inclined to advance in sympathy with the increased cost of production and overhead. With factories reduced to about 50 per cent. of their capacity thru car shortage and labor shortage the overhead per thousand has been increased. Face brick are priced between \$28 and \$38 per thousand. Common brick are also strong, altho no recent advances have been recorded. Mud brick are selling at \$14 to \$15

delivered, while shale brick are quoted from \$16.50 to \$17.50 delivered on the job.

Not all distributors of brick in Cleveland will be short in their supplies. One of these is the Cuyahoga Builders Supply Co. When Robert J. Mitchell took charge of the brick department of this concern, he apparently saw what was coming, and promptly loaded up on several different kinds of brick, against the advice of wise ones. The aggregate quantity of material thus acquired gives this firm about 10,000,000 brick with which to meet its demands. With this to back his interests, Bob has gone after the big business, and seemingly is landing almost everything he goes after.

With the campaign "Own Your Own Home" under full sway in Columbus, Ohio, building operations continue to expand. During the week ending August 16, permits were issued by the Columbus building department for new structures estimated to cost \$188,605. Of that amount over \$150,000 will be required for the 25 new dwellings projected during the week. The week's permits are the second largest for any week during the present season. So far this year permits have been issued for \$3,690,113 new construction work. Outside of the city in one suburb alone, that of Upper Arlington, records show that 49 dwellings are in process of construction.

The chief feature of the brick trade in Columbus and central Ohio territory is the scarcity of railroad cars, which is causing a lot of inconvenience to shippers and factories. During the past few days the shortage of cars is more pronounced, with the result that allotments of equipment amounts to considerably less than 50 per cent. of needs. This, coupled with the labor shortage, which is bad at many of the face brick manufacturing plants, has cut production to less than 50 per cent. of capacity. With that production there is soon bound to be a shortage of brick. Few if any of the plants have any surplus to amount to anything.

All brick interests are extending themselves to obtain additional supplies of brick material here. Some substantial brick contracts are being closed weekly at the Hydraulic-Press Brick Co. One of the most important of these recent orders is for 200,000 brick for a service building for the National Electric Lamp Association at Nela Park. "Face brick all over Ohio is oversold," says H. H. Crowell, general manager for the Cleveland district of the Hydraulic. "This condition will doubtless obtain for some time, as manufacturers cannot do more than make a maximum production. At present this is hardly sufficient to care for a normal increase in building, let alone the abnormal requirements of the Cleveland district itself in the matter of new housing."

According to figures tabulated so far by the promoters of the central route for the barge canal to connect the Ohio River with Lake Erie, the canal would carry at least 33,750,000 tons of freight yearly. These figures are being collected and tabulated under the direction of James G. Young, traffic commissioner of the Columbus Chamber of Commerce. The barge canal is being pushed by the Great Lakes and Ohio River Waterways Association, of which Henry A. Williams, of Columbus, is president. Listed in the commodities which would be carried by the canal is brick, terra cotta and other clay products. Portsmouth, Ohio, says that fully 1,500,000 tons of brick would be shipped from that location yearly. Coal and iron ore would be the commodities having the largest tonnage.

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The Manufacturers of Clay Products at Reciprocal Insurance Bureau, offers you an opportunity to come in and insure against fire with preferred risks that are of your own class and engaged in the same line of business. This Bureau saves you the expense of paying for (1) enormous overhead, (2) agents' commissions, (3) companies' profits. You are assured of greater safety, co-operative assistance of a practical kind, and better service.

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Let us have your inquiries, and we will take the chance of developing them into orders on our books.

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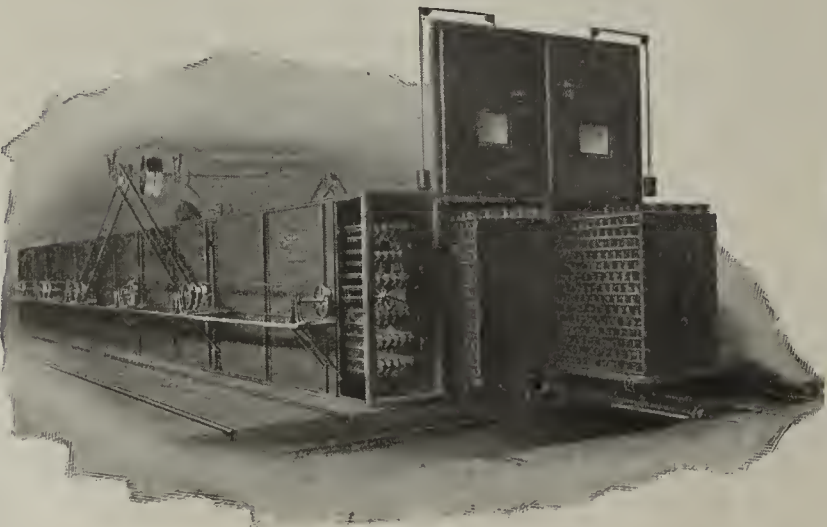
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Unless manufacturers can speed their production, the opinion of Captain R. L. Queisser, of the R. L. Queisser Co. is that by October 1 there will be no face brick obtainable in the Cleveland district. This is principally due, he claims, to the lack of production by some manufacturers between the signing of the armistice and the time when the building demand began to get under way. In his opinion there is slight chance of production, that should have been under way during the first three months of this year, being made up if the present outlet continues. "There must be greater cooperation between the brick interests and other branches of the building industry also," says Mr. Queisser. "Even tho there might be plenty of brick on hand at present, building is bound to be held up. In fact it is being held up right now because housing cannot be finished owing to the lack of doors, window frames and sashes."

Some relief locally from brick shortage, at least as far as common and shale brick is concerned, is seen in the progress of plans of the Superior Brick Co., Cleveland. Present indications point to actual production on the market by January 1. This firm is taking bids on its first unit, and is also contemplating the construction of two additional units as soon as operations at the original plant are under way. These plants will cover about 90 acres in the Jennings Road-Harvard Denison Bridge section of the city. The combined units are expected to have a daily output of 500,000 brick a day. Meanwhile Robert J. Mitchell, of the Cuyahoga Builders Supply Co., who has taken upon himself the sale of \$100,000 stock of the new company, has disposed of \$20,000 stock, and expects to dispose of his quota in 40 days, instead of five months, as was his original intention. Mr. Mitchell has been appointed assistant to William A. Fay, general manager of the Cuyahoga.

Oklahoma

Subscription books have been opened at Henryetta, Okla., for the organization of a brick and tile plant with a capital stock of \$40,000. The organization follows from the discovery of immense beds of brick shale adjacent to Henryetta. Adjoining this brick shale bed is another tract of what is reported to be excellent potter's clay, and it is said that the brick company may engage in the making of pottery unless an independent company for manufacturing this product is formed.

Pennsylvania

The Plastic Brick Co., a new corporation in Pottstown, Pa., has started the erection of a plant forty by one hundred feet.

Announcement is made that offices of the Eastern Paving Brick Manufacturers Association have been opened at 1019 Lincoln Building, City Hall Square, Pa. C. Perkins, who was formerly with the Dunn Wire-Cut Lug Brick Co., at Conneaut, Ohio, was made chief engineer of the above association a few months ago.

A corporation has been chartered by the Westinghouse Airbrake Co. of Pittsburgh, which will expend \$1,000,000 in the erection of homes for employes of the Westinghouse interests. Deeds for real estate and dwellings valued at just short of \$1,000,000 were taken over by the company immediately upon its formation.

A scarcity of common brick has developed in the district around Pittsburgh, Pa., since the first of August. The reason apparently is the efforts of brick makers in this locality to develop face brick. So much time is being devoted to that,

that the ordinary types are being somewhat neglected. Even with the shortage in effect, the prices have not shown any material change.

Not only has building taken a decided spurt, but the State Highway Commission has been very active in awarding contracts for new paved roads. More of this work is being done this summer than ever before contracted for during one season. Hardly a county in the State of Pennsylvania has been slighted in this respect. Main traveled highways, have of course, received most attention. The western part of the state has been especially favored in this respect altho county commissioners have awarded many local contracts.

The John S. E. Pardee Co., Heed Building, Philadelphia, Pa., is doing its usual good business in the sale of common, face and paving brick. The company is the sole representative of the Mack & Pennsylvania Clay Works, and handles material in carload lots for delivery on the job. In the matter of straight hard, stretcher and salmon brick, the shipments for different building operations are now averaging about 200,000 brick daily. A fine grade of buff, gray and red face brick is sold, and in complete range of colors. This specialty is produced of vitrifying shale and fire clay. The company also handles a fine quality of vitrified paving brick.

There has been a decided increase in new building in the Pittsburgh district of late as has been reflected by the increased number of building permits issued over that of the last quarter and by comparison with the records for the same period of the last two years. In this activity the brick industry is sharing to a considerable extent. During the last winter months there was considerable apathy in new construction work in the Pittsburgh territory, and the early spring months did not show much improvement. However, there was a remarkable increase in new building activity in June and July, and the activity experienced during August has been the best in several years. The bulk of the new building construction is confined to the smaller structures, such as garages, stores and residences. No new business block building is being reported, altho it is known plans are being held up for railroad terminal stations, school buildings, cold storage warehouses and office buildings. In time, however, these plans will be released for bidding, but interests concerned are of the opinion that building costs ere long will be slightly reduced from present schedules. Hence the immediate delay in awarding contracts.

South Carolina

The Ebenezer Brick Co., of New Port, York County, S. C., was commissioned with a proposed capital stock of \$5,000. Petitioners were Joe M. Taylor, F. R. Black, W. H. Matthews, and E. P. Steele. The company proposes to manufacture brick and pottery.

Tennessee

Wilbur A. Nelson, state geologist, is preparing a new geological map of Tennessee. The clay and coal properties will receive detailed consideration in the various counties.

The acquirement of the South Memphis Brick Co. by a Memphis syndicate means the enlargement of the facilities there to a capacity of 100,000,000 brick per year. The new firm will be known as the Herbert-Fischer Brick Co. The capitalization is \$250,000. T. L. Herbert is president; W. W. Fischer, vice-president; and B. A. Bogy, secretary and treasurer. Building brick and face brick will be



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produced. Clay properties near the city will be utilized. Dryers, kilns and presses will be installed and the old capacity trebled.

Texas

N. W. Dunham of Breckenridge, Texas, has formed the Dunham Brick Co., with a capital stock of \$30,000. He plans to erect a plant to manufacture building brick having a capacity of about 10,000 brick per day.

Utah

Wm. C. Staines died at his home in Salt Lake City, Utah, recently following an illness which he suffered for nearly two years. Mr. Staines was secretary and treasurer of the Improved Brick Co., until his health failed.

Virginia

A new firm has been organized to manufacture brick and terra cotta pipe, roofing tile and similar commodities. It will be known as the Roanoke (Va.) Brick and Tile Corporation. J. T. Bandy is president; L. E. St. Clair, secretary, and A. S. Lesley, treasurer.

West Virginia

According to reports, building construction in Huntington, W. Va., at the present time is the greatest in the history of that city. A large amount of home building and construction of business houses and factories is using the entire capacity of the local brick plants.

The Dollar Savings & Trust Co., of Wheeling, W. Va., has announced that it will purchase bonds of the Mack Manufacturing Co., of the issue of June 1, 1916, in an amount not exceeding \$7,000. The Mack company operates successfully paving brick and block plants in the Hancock County clay district in the upper part of the Ohio Valley.

The plant of the Municipal Shale Brick & Block Co., located just east of Martinsburg, W. Va., has been disposed of at public sale to D. E. Tracy, who has been operating the property since it became involved in financial difficulties some months past. The price paid for the property is \$25,000. Under the continued management of Mr. Tracy, the capacity of the plant will be increased and additional machinery is to be installed with this end in view.

Two additional kilns are to be built at once at the plant of the West Virginia Paving & Pressed Brick Co., which is located at Huntington, W. Va. The firm also plans other extensions to its plant at an estimated cost of upwards of \$100,000. These improvements are needed on account of the growing business the company is being favored with. General demand for both paving and building brick of all character in the Huntington district was never so extensive as is now being experienced. Road improvements are at their height and building activity is increasing.

Wyoming

The acquisition of several large orders has enabled the H. G. Peters Co., brick manufacturers in Douglas, Wyo., to start operations again. This company expects to run until late in the fall.

* * *

The Thomas China Co., of Lisbon, Ohio, manufacturers of electric porcelain products have started erection of additional packing departments and new clay sheds. The main office of the company is in East Liverpool, where its principal works are located.

BRICK *and* CLAY RECORD

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decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

Is Building Good or Bad?

EXAMINATION OF STATISTICS covering building and engineering operations in the states north of the Ohio and east of the Missouri rivers, namely, New England, New York, New Jersey, Pennsylvania, Maryland, Delaware, District of Columbia, Virginia, Ohio, West Virginia, Illinois, Indiana, Iowa, Wisconsin, Michigan, Minnesota, North and South Dakota and portions of Missouri and Eastern Kansas, reveals the fact that from January 1 to September 1, 1919, over one and one-half billion dollars worth of work passed into the contract stage. This is nearly twice as much in value as was let during the corresponding period of 1916, admittedly the best building year that this nation has ever seen.

Of course, building is not twice as active as it was in 1916 due to greatly increased costs which obtain at the present time, but material and labor is not twice as expensive as it was three years ago and so we can take great courage from the statistics covering the period from January 1 to September 1 of this year.

The same statistics tell us that contracts for \$1,211,065,000 worth of building was let from January 1, to September 1, 1918, and \$1,156,176,155 was let during the same period of 1917, but it must be remembered that these were periods in which a great deal of war work was done and no doubt these figures include those operations, while the statistics of January 1 to September 1, 1919, probably include only a negligible amount of such work.



American Ceramic Wares and Cuba

IN THE WHIRL of activities of domestic business and what might be termed "distant export" trade, we are apt to forget some of the nearby export markets, and foremost among these is Cuba. This country is our friend and neighbor, just close enough to be on intimate terms, and just far enough to be deemed in the export field. Its people are good buyers and at good prices; they want the best and are willing to pay for it, but they want that spirit of equality that brings the right products at the right figures.

Cuba presents a wealth of opportunities to American manufacturers in different lines—opportunities that often are not realized and possibilities not thoroly appreciated, for this nation is so small geographically and likewise of accordant inconsiderable population (less than 3,000,000 people) that it is usually dominated by South American and other foreign coun-

tries. This, to the advantage of some American producers who know, and to the disadvantage of others who do not know.

Just consider a few figures. In 1917, Cuba did a combined export and import business of \$558,063,453, or a per capita of \$223, as compared with \$88 per person in the United States. Cuba in proportion to population is the richest country in the world, and incidentally, it is the greatest market for its size in the new world—a simple, terse fact that may be surprising to many. Cuba is now probably one of the best customers of the United States, but the field is far from being fully cultivated—just a little more than "scratched" as big, modern commerce goes.

The American ceramic manufacturer and Cuba form a combination that offers an exceptional mutual advantage. We have the wares and the inhabitants of Cuba want them. This little country is particularly favorable to our ceramic production, including pottery specialties, sanitary earthenwares, hollow tile, floor and wall tile and so on. These products are used, and used to a large extent in Cuba. Burned clay materials predominate in utility in this section. No matter where one may go thruout the island, evidence of this is seen—and such evidence as to open one's eyes.



We Have Not Yet Walked Thru This Open Door

UNDER the reciprocity treaty of 1902, duties on manufactured goods, as well as agricultural products in trade to and from this country and Cuba, are reduced from 20 to 40 per cent. This gives the United States an advantage of 25 per cent. on pottery, machinery, and other items; 30 per cent. on chemical products, glass and fibre specialties; and 40 per cent. on all manufactures of cotton. With this condition, speaking primarily with regard to ceramic materials, the American potter and ceramic producer should be awake; no time should be lost!

Living in Cuba is now on a high plane, estimated at at least 25 per cent. higher than in the United States. So high prices are no novelty here, and the Cubans, as a whole, are not apparently worried at all over the outlook; they are buying freely, and local prosperity is on the increase.

With tariff concessions as noted, the American manufacturer of ceramic wares, as well as other products, is afforded a wonderful opportunity to practically monopolize the trade of Cuba, but up to date he hasn't done it, for figures show that other countries now control about \$20,000,000 worth of business in

this territory. This condition of affairs can only be attributed to our failure to pay careful and considerate attention to the requirements of the Cuban importer, whose knowledge of the local trade is complete, and which knowledge, incidentally, always guides the European exporter.

Now that the war is over and trade thruout the world is on the rebound, manufacturers in the United States should "get busy"; they should improve their methods of trade with this island republic, and this will lead to increase trade and a strengthening of existing relationship. They should look to the needs and wants of Cuba, and give the Cuban importers the "square deal." And so, there can be but one answer—American ceramic and other goods will more and more predominate in the Cuban market, and some of the millions of Cuba's money now going to other countries will find their way into the coffers of the American manufacturers.

* * *

New Organization to Put Skids Under Wood Lath

WE ARE JUST in receipt of an announcement to the effect that the Society for Fire Resistive Frame Construction has been organized in Chicago. This information comes from the office of the Associated Metal Lath Manufacturers, Inc., which is a trade association of manufacturers of that particular product.

The press announcement states that the National Board of Fire Underwriters publishes a list of ninety-one cities which have eliminated wood shingles by law. Very Good! Then, the announcement says, "There is no reason why wood lath should not likewise be eliminated, etc." Excellent!

However, we cannot so readily applaud the announced purpose of making frame buildings fire resistive without saying something about the possibility of making such structures practically fireproof by not using *any* wood. It is humanitarian to protect wood joists and wood studs against fire but it is better to use no wood at all if absolute safety is desired—not that wood does not have its place in the construction of a building, for who would think of building a door out of brick or a picture molding out of cement?

There are some clay products manufacturers, despairing of success in getting across the absolute fire resistive idea in home building, who are a good deal like those who seem to be interested in the Society for Fire Resistive Frame Construction. They are content with selling brick to veneer an inflammable interior—and it is on the interior that most fires have their origin.

While we believe it is good business to try and sell brick to every owner of a frame house so that he might make his home a great deal more fire resistive,

yet we believe that the brick manufacturers of America should not stop there, but should continually work toward the erection of homes constructed entirely of clay products, and so, thoroly fire resistive.

This is the hope of the Common Brick Manufacturers Association of America which says that it is going to demonstrate that it is possible to build small brick houses with clay walls at a figure that will compare favorably with an all-frame house.

More power to that kind of effort.

* * *

Again, the Coal Situation

WHILE THERE has been a resolution introduced in the United States Senate asking the committee on interstate commerce to investigate the cause for the present high price of coal, nevertheless, *Brick and Clay Record* still advises its readers to realize the need for storing coal now. Regardless of whether or not the price of coal would be reduced by the governmental investigation, the fact still remains that it would be a long time before anything definite could be done in this direction, and it is quite likely that the law of supply and demand would defeat the purpose of the investigation.

It is not generally known, but nevertheless a fact, that there is scarcely a coal mine in the United States that is equipped to store its coal. It is therefore necessary for the coal operator to immediately ship the coal that is taken out of the ground, and this means that coal cars must be available each day at each plant according to the orders in hand, and the quantity of coal that could be extracted during the daily period.

For the past several months, coal mines have been averaging only three or four days per week because the immediate demand for coal has been at a low ebb. It is also true that during the past few weeks there has been a constantly increasing demand for coal and this demand is going to become constantly greater because the entire country is fast approaching a more normal condition in industry, and also the winter season will soon be upon us.

It seems quite apparent therefore, that regardless of the present or immediate price of coal—regardless of any action that might be taken by the government—it behooves clay products plant managers, who would be assured of a necessary supply of coal for the next several months, to immediately order and store coal. There is nothing to indicate that coal prices will be less, while on the other hand, there is much to indicate that regardless of right or reason, coal prices will go higher.

Another serious phase of this whole situation lies in the fact that everything points to a serious railroad condition, which is liable to develop into just as serious a period as the country went thru a year ago.

PROMINENT CLAY MEN ORGANIZE *to* MAKE NEW BUILDING MATERIAL

*First Company is Formed and Initial Plant is Being Built
to Manufacture Haydite, the Light Weight Aggregate
Which Promises to Revolutionize the Construction Industry*

THE ORGANIZATION of the American Aggregate Co., under the state laws of Missouri, with headquarters in Kansas City, marks the birth of what promises to be a new, great and important industry into which burned clay enters as an important factor. The purpose of this company, which is the first of its kind, is to manufacture and sell a light-weight aggregate made from clay or shale which was invented by Stephen J. Hayde, a prominent contractor of Kansas City, Mo. As has previously been reported, this substance played an important part in the construction of concrete ships during the war.

Backing the formation of this company, which is the culmination of experimental work and tests made during the past five or six years by S. J. Hayde, are some well known members of the clayworking fraternity and building construction industry. The new company was incorporated by the following named men and has taken over all of the patents and contracts of Mr. Hayde: B. W. Ballou, S. J. Hayde, F. C. Lafountain, Geo. S. Hayde, W. H. Cloud, all of Kansas City, and Wm. H. Gifford, of Chicago. B. W. Ballou is president, F. C. Lafountain, vice-president, L. M. Lemon, secretary, and S. J. Hayde, treasurer.

Some little information has been dropped here and there by newspapers and magazines concerning the development and use of this wonderful new material—light-weight aggregate or "Haydite" as it has now been named in honor of

the inventor, but the articles have been lacking in detail and some even not in keeping with facts.

HISTORY OF THE DEVELOPMENT OF HAYDITE

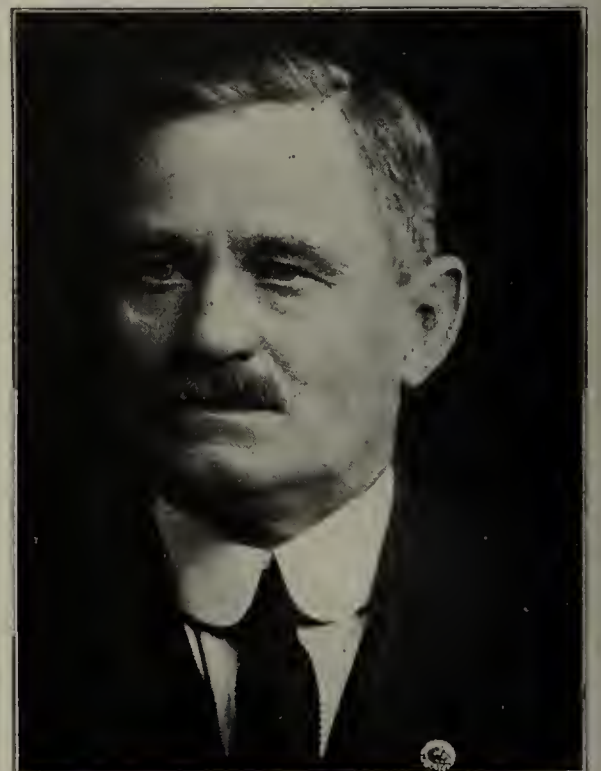
The historical review of the work done by Mr. Hayde in developing this material would indeed be of great interest. The idea of making a material for use as an aggregate in concrete, one that would be lighter in weight and yet fully as strong as crushed stone or gravel, occurred to him when he was a contractor for the construction of the United States Post Office in Kansas City, in 1897-98. From his years of general experience in the building industry, Mr. Hayde found that ordinary concrete was not fire and water-proof and that its weight was very often against it. After trying out a number of light compositions of different kinds he found that by crushing any kind of well-burned clay and mixing it with a cementing material and water, that a practically fire and water-proof aggregate, very much lighter than the old kind, could be produced. However, while burned clay was found to be the only practical light-weight fire-proofing material that could be used as concrete aggregate, the stickler was how to produce it commercially.

In developing a new material it was necessary to make it different from all other burned clay material since such properties as weight, absorption, expansion and contraction and capillary attraction had to be eliminated. Following



B. W. Ballou, on the Left, President of the American Aggregate Co., is a Well-known Figure in the Clay Industry. Besides Being an Active Association Man He is Also General Manager of the Kansas Buff Brick & Manufacturing Co.

Stephen J. Hayde, on the Right, Treasurer of the New Firm, is a Prominent Contractor in Kansas City Where He Has Constructed Many of the Large and Important Buildings.



along the lines of usual practice in the clay industry and failing at every trial, Mr. Hayde left his business in Kansas City early in 1913 and went to California for a short trip. But, after spending three months in San Francisco, he decided to remain away from his business in Kansas City for a longer period so as to complete his experiments in manufacturing a light-weight aggregate or else fail in the attempt before he would return. After one and one-half years of constructing kilns, trying out different methods of production, he finally perfected the process to such an extent as to guarantee its practicability. He then returned to his home city early in 1916 and acquired a one-half interest in the Builders Brick & Manufacturing Co., of that city, and continued experimental work and tests to the point where in July, 1917 he applied for a United States patent which was granted and issued in February, 1918.

OFFERS USE OF PATENTS TO GOVERNMENT

Mr. Hayde had been watching the progress of the discussions with reference to concrete ship construction with considerable interest and immediately after obtaining his patent he tendered to the Concrete Division of the United States Shipping Board, the use of his patents for the construction of ships and barges by the government and for the government, free of charge for royalty under those conditions for the period of the war. He sent samples of "Haydite" as well as concrete made from it to the government suggesting its adaptability for use in the construction of concrete ships. This brought to the attention of the heads of the shipping board the possibility of producing the aggregate they anxiously sought and it was instrumental in bringing about the efforts that were afterward made by the members of the shipping board of the construction of concrete ships from burned clay aggregate.

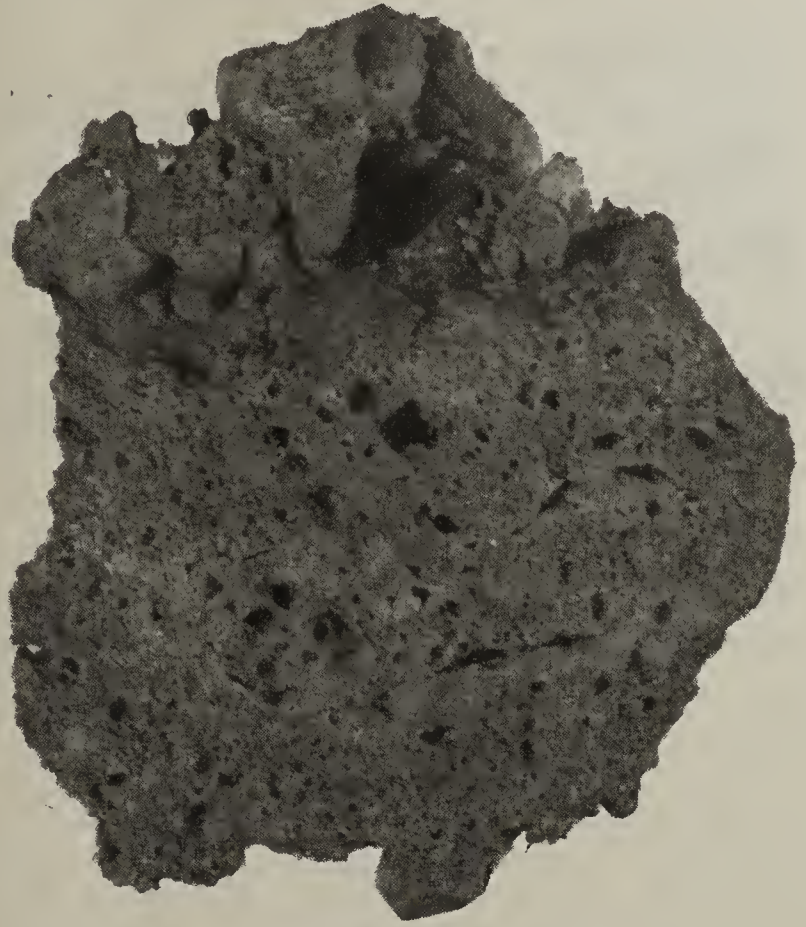
R. J. Wig, chief of the Concrete Division of the United States Ship Building Board, requested Mr. Hayde to send five hundred pounds of "Haydite" to the United States Bureau of Standards to be tested. The results of the test were so satisfactory that the shipping board immediately undertook the production for a hull to be built at Brunswick, Ga. This boat has now been completed and has met with the entire satisfaction of the shipping board.

PHYSICAL PROPERTIES OF HAYDITE

Some of the properties of "Haydite" are: It is of a bloated or swelled nature caused by the gases and vapor generated by the decomposition of the clay when subjected to high heat. The expanding gases not only bring about this form, but fill the burned clay product with a series of non-connecting holes causing a light sponge-like material to be formed. It weighs only about fourteen hundred pounds to the cubic yard when crushed ready for use. However, one seldom refers to the weight of this material but on the other hand refers to it by volume. Concrete made from ordinary aggregate, that is, crushed stone or gravel, ordinarily weighs one hundred and forty to one hundred and fifty-five pounds per cubic foot. Where "Haydite" is used instead of ordinary aggregate the weight of the concrete is considerably less, being only ninety to one hundred and six pounds to the cubic foot. Tests made by the Bureau of Standards on concrete made with "Haydite" show from 1:3 and 1:4 mixtures, compression strength of 3140-3300 pounds per square inch on seven-day pieces. Concrete made from "Haydite" also shows greater strength in tension as well as in compression than ordinary concrete. Thus it is seen that "Haydite" will make concrete not only fifty per cent. lighter but also from thirty to forty per cent. stronger than other aggregates now in general use.

Furthermore, the concrete made from "Haydite" is devoid of capillary attraction, expansion and contraction and is

practically fire and water-proof. When this substance is used it is generally included in a 1:3 mix. About one-third of the volume of the aggregate passes a ten mesh sieve and ranges in size from ten to two hundred mesh, and the remaining two-thirds of the material is in sizes from ten mesh to one-fourth of an inch. It is a peculiar fact that "Haydite" itself is a very weak material, yet a stronger



A Photograph of a Piece of "Haydite" as It Appears When It Comes Out of the Kiln. The Actual Area of the Face of the Piece is About One-Fourth That of the Above Illustration.

concrete can be made from it. It is also a non-absorbent and non-conductor of current and sound.

HAYDITE WILL CHEAPEN COST OF BUILDINGS

Altho the selling cost of "Haydite" is about double that of other concrete aggregates, the cost of constructing a building using "Haydite" would be less than were ordinary concrete used. The difference in the kind of cement required the decrease in dead load, the less cost of handling because of decreased tonnage, and the advantage of strength in both compression and tension, will overcome the difference in cost of the finished concrete and make it cheaper to use "Haydite."

"Haydite" when mixed in proper proportions with cement and water can be used successfully in practically all classes of construction work where concrete has been heretofore used, and permits the use of concrete for construction in a great many instances where it has been previously impossible to use such a type of construction. Besides finding application in the shipping field, an important use of this material will be for the building of water-proof reservoirs and oil tanks. Another use will be in connection with steel construction and reinforced concrete for buildings over three stories in height. It is predicted that this new material will revolutionize the building industry. If it is used as a mortar in brick masonry, it has an unlimited field. Tests have been made on brick masonry laid up with mortar made from "Haydite" and results have shown it to be water-proof. Besides this, the material, is very elastic and not subject to expansion and contraction, so cracks in masonry construction will be much less numerous. As every brick man knows, one objection to the use of brick has been that

after heavy rains a brick building becomes damp and cool because of the moisture absorbed by the mortar. The use of "Haydite" in the mortar will overcome this objection.

CONCRETE RAILROAD CAR A REVELATION

Still another application of "Haydite" is in its use as an aggregate in concrete for railroad car construction. In January, 1919 a concrete gondola cars was built in Chicago.



Concrete Car Wherein "Haydite" Was Used as the Aggregate. This Car Has Been in Regular Service and Has Withstood Strenuous Tests.

This car was invented and designed by Joseph B. Strauss, C. E., who is president and chief engineer of the Strauss Bascul Bridge Co. of Chicago and whose work in the field of engineering has gained him a high reputation.

The first car was built for demonstration purposes and is a solid bottom, high side gondola with steel underframe and standard equipment. The body is a unitary concrete structure with vertical walls averaging $1\frac{1}{2}$ inches in thickness and the floor averaging $2\frac{1}{4}$ inches in thickness. The stakes are on the interior and are integral with the cross-bearers. The concrete walls and floor are contained and confined within a limiting frame of steel angles with which, as well as with the steel underframe, the steel reinforcement interlocks.

The demonstration car complete weighed 53,600 pounds but the weight of the commercial car will be 48,000 pounds. The overrun in the first car was due to the handicaps under which it was built and the inability to obtain the materials specified. The thickness of the walls is the minimum ever undertaken and the construction as a whole evidences originality and bold design which is no less striking than the daring of the general idea of a concrete car for railway service.

STRENUOUS TESTS MADE ON CAR

This particular car was delivered to the Illinois Central Railroad in the presence of the officials of the United States Railroad Administration and railway men from all over the United States and Canada. It has since traveled over 6,000 miles and endured all the use and abuse and constant service of every-day railway work. It was operated over the Illinois Central Railroad for thirty days and then over various roads under the auspices of the Railroad Administration for a still longer period and now is in operation in the coal and iron service on the Pennsylvania Railroad between Pittsburgh and the Great Lakes. It has been given a collision test, passed thru a car dumper, loaded with billets, rails and coal, and unloaded with clam-shell buckets weighing 4,400 pounds. These were dropped onto the car from a height of twenty feet. The car was also sent over the railroad humps and in general given intensive usage intended to and which has fully tested out its staunchness.

The car has been passed upon by the Bureau of Standards of the United States Government and also the Railroad Administration as being entirely practicable and having a large

field of usefulness. Its conceded advantages are its materially lesser cost and its greater endurance. It requires no painting and is free from attack by acids or other destructive agencies either from the cargoes direct or in combination with the elements. It is especially adapted for hauling coal, slag, cinders and hot ashes, being waterproof, watertight and fireproof.

The construction of the solid bottom gondola will soon be followed by dump cars, box cars and passenger cars under the Strauss patents. The box car, it is said, will be particularly satisfactory in the grain trade since it will be proof against leakages, loss by fire and damage by moisture and rodents.

SHIPBUILDER IS ANXIOUS TO SECURE HAYDITE

Boats and barges will continue to be constructed of concrete with "Haydite" as its aggregate. This is exemplified by the following letter which was received within the past thirty days by Mr. Hayde from the president of a prominent ship building company:

"We are builders of concrete boats and barges and are desirous of using the best light aggregate in their construction. We have been solicited for orders for light aggregate by several firms, quoting us prices, freight rates, delivery dates, etc., but upon personal investigation by the writer we found that 'Haydite' was the only reliable product which had been thoroly tested and could be produced without further experiments.

"Our situation is this: We have one 1,400 ton ocean-going concrete barge with forms up and reinforcing placed and are ready to pour our concrete. The Bureau of Standards' tests on 'Haydite' are satisfactory to us and the samples and tests have been approved by Lloyds. By using 'Haydite' we can decrease the weight of our vessel a certain percentage. We feel that it would be an asset to you to have 'Haydite' used in as large a boat as this, and in the only one which is being built under Lloyds' supervision, inspection and approval. We expect to build from one to two of these vessels per month after the first one is finished, and also have others being built under our supervision and subject to royalties, for use as inland carriers on the Ohio, Mississippi and Missouri rivers. As we furnish the design and the supervision we would naturally specify what materials are to be used in order to reach the desired tonnage by use of our design, which is a French one and much lighter than any others in use in this or any other country.

"If we place an order with you immediately for 500 tons of 'Haydite' could you not make arrangements to ship at least 200 yards of this in sizes ranging from $\frac{1}{2}$ inch to $\frac{3}{16}$ inch and $\frac{3}{16}$ inch to dust in proportions of $\frac{1}{3}$ of the former and $\frac{2}{3}$ of the latter by at least September 10? We mean business and are in a position to pay cash at loading point, if above terms can be complied with.

"Can you not make arrangements to furnish this material as above specified, as we believe it would be to our mutual advantage? We would also consider placing a standing monthly order for a large quantity of this aggregate."

CONSTRUCTION OF PLANT HAS COMMENCED

Now that the American Aggregate Co. has taken over all the patents, contracts, etc. of Mr. Hayde, it has started the construction of a plant and will soon commence the manufacture of "Haydite," as well as license other firms to manufacture this material in other territory. The manufacturing process is very simple since most any shale or clay can be used. Clay, which for many purposes is too high in lime or contains a small percentage of lime pebbles which prohibits its use in manufacturing brick, can often be used for making "Haydite."

The raw material is won just as any clay or shale is

harvested on the average brick plant and crushed to one inch or less in size. The clay with its natural moisture content is then fed into a small rotary kiln which is fired from the same end as the raw clay is supplied. The kiln which measures about twenty-four feet long by six feet in diameter is slightly inclined so that as it rotates the material content therein is caused to move downward. Natural gas, oil, or powdered coal must be used to fire the kiln. The heat is maintained at a temperature of approximately 2,000 degrees Fahr. and the clay is burned in about one hundred and twenty minutes or less. The time and temperature of burning, of course, varies with different clays and the proper period is determined by experiment. The material must not remain in the kiln too long or it will begin to melt down and close up the pores. As the material comes out of the kiln it is extremely light and has a sponge-like, vesicular structure. Millions of tiny inclosed, non-conducting air cells exist in each of these pieces. The pieces as they come out of the kiln vary in size from fine material to lumps the size of a head. After it is burned, the aggregate should be piled up and allowed to cool slowly and if a raw material containing any considerable portion of lime producing pebbles or rock is used, the material, after it is burned and cooled should be wet down to slake the lime before crushing for use.

bles or rock is used, the material, after it is burned and cooled should be wet down to slake the lime before crushing for use.

Altho the above method is the best and highest developed way of manufacturing "Haydite" the material can be made in the following manner: The clay is formed into green brick in the ordinary manner and then set in regular periodic kilns without being dried thoroly and burned in fast time. Usually it takes about twenty-eight to forty hours to burn the material in this form. However, the "Haydite" when manufactured by this process must be taken out of the kiln with the aid of a pick-axe. This method is, of course, very much more expensive than the process described above but it is covered by the patent which also covers all other cases.

"Haydite" is no longer an experiment. It has already reached a high stage in the development period. It is not expected to compete with brick but will rather be an asset to the brick manufacturer. Undoubtedly, a great number of clay manufacturing plants will soon be licensed to make this material and it is also quite likely that a great part of the output of "Haydite" will be handled by building supply dealers.



TWO IMPORTANT COMMON BRICK GATHERINGS

Philadelphia, September 11

A get-together of common brick manufacturers will take place in Philadelphia on September 11, at a place and time not yet decided. This meeting will consist of manufacturers comprising what was known during war days as Group 4, including Eastern Pennsylvania and Southern New Jersey.

The brickmakers of this territory have decided to invite the manufacturers of Northern New Jersey, Maryland and the District of Columbia.

Horace Siner, of the Siner Bros. Brick Co., Philadelphia, is president of this district of the Common Brick Manufacturers' Association of America, and Wm. Conway, Jr., is secretary. It might be said by way of explanation that this district organization is a continuation of the organization formerly known as Group 4 in connection with the War Industries Board.

The meeting promises to be a lively one. Ralph P. Stoddard, secretary and manager of the Common Brick Manufacturers' Association of America will be present to stir 'em up.



Albany, September 17

The second confab of common brick manufacturers of importance to be held during September, will take place at Albany, N. Y., on Wednesday, September 17 at the Ten Eyck Hotel at 10 a. m. This gathering will be under the auspices of what is known as the Eastern New York Brick Manufacturers' Association, and is called by the secretary, C. B. Reinhardt of the Queen City Brick Co.

Eastern New York brick men have also invited the Mechanicsville group, Hudson River group, Connecticut Brick Manufacturers' Association, as well as the New England Brick Manufacturers' Association to meet with them.

A fine time is anticipated. The mayor of the city will welcome the visiting brick men. Senator Calder, Washington champion of business men interested in building materials, will be present, as well as E. Knickerbocker Boyd.

Wm. J. Bowen, president of the bricklayers union, has

also been invited to attend and address the brick manufacturers.



Exports of Clay Products

Foreign call is keeping up for American clays and clay products. Exports from the Port of New York for the month of June, from figures now available, show the following totals:

Fire brick, total valuation of exports, \$46,319.11. The principal shipments were made to Cuba, \$6,806; French West Indies, \$3,000; Brazil, \$6,561; France, \$4,334; and San Domingo, \$2,685.

Building brick, total valuation of exports, \$1,470, divided between Trinidad and Argentina.

Chinaware, total valuation of exports, \$29,166. The principal shipments were made to England, \$2,927; Mexico, \$2,022; Cuba, \$3,427; Argentina, \$3,021; Brazil, \$2,681; Colombia, \$2,009; British India, \$3,687; and Boliva, \$1,800.

Fire clays, total valuation of exports, \$2,983. The principal shipments were made to France, \$1,000 (27 tons); Cuba, \$768 (49 tons); San Domingo, \$270 (15 tons); and Uruguay, \$404 (20 tons).

Other clays, total valuation of exports, \$3,678. The principal shipments were made to Venezuela, \$692 (21 tons); Argentina, \$2,782 (50 tons); and England, \$204 (14 tons).



A Gratifying Revelation

It is said upon good authority that the United States Housing Corporation and the Emergency Fleet Corporation built somewhere in the neighborhood of twelve thousand houses during the war. Some were frame, others were of stucco on wood lath, still others stucco on metal lath, as well as poured concrete made by using forms.

But, of the twelve thousand houses most of them were built of brick. The Camden, N. J., and Bridgeport, Conn., projects were almost entirely of brick.

SIMPLIFYING *the* POWER QUESTION *on* CLAY PLANTS

Comparisons and Advice on Choosing Power Equipment, Written by a Clay Products Man So As to Be Applicable to and Be Understood by Clay Plant Owners

By H. L. Longenecker, Cr. E.

Manager, Cambridge Brick Co., Cambridge, Md.

EACH YEAR sees more electric motors installed in clay-working plants. Where new plants are built and electricity is available, motors are installed as a matter of course. The reasons scarcely need to be enumerated. Electric motors do away with the bother and expense of handling coal and ashes to and from the boilers. By their use we get away from power plant up-keep—new boiler tubes, boiler patching, pump and engine repairs. Every power plant has troubles of this kind, clayworks' power plants seem to have more. Then too, besides not needing firemen, ash and coal wheelers, we are able to say a fond farewell to that frequently dictatorial individual, our licensed engineer.

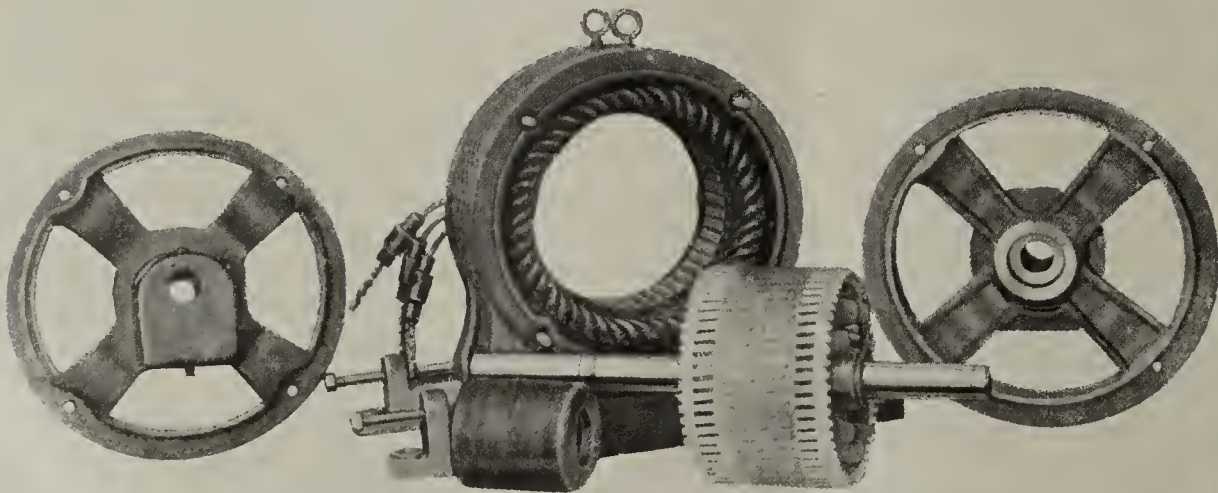
If these reasons are not sufficient, then just consider that with electric power, when you pull the switch at the close of a day's run, your power plant expense is off—no banked boilers or night fireman. The fan motors will hum right along all night without any attention, except perhaps a little oiling by the watchman. Neither do you have to worry about the fireman oversleeping in the morning. Just toot your Klaxon (in place of the good old whistle) throw in the switch and you're off for another full day's run. In case of machinery repairs at night or holidays, there is no need of the boilers and engineer standing by—Mr. Motor is right on the job and it doesn't take any special skill or education to stop, start or run it. It will back up easy or go ahead slow just as well as the old engine. If wet weather or other causes shut down the plant, power plant expense for that day is off. With steam you would have used a half or a ton of coal getting up steam besides the wages of the fireman and engineer. All these arguments would be good if electric power cost as much or more than your own steam power plant. As a general rule the power companies

are anxious to sell you power at a lower rate than you can produce it. They can do this because they have specialized in the manufacture of power, while it is only one of your side-lines. If you are near a hydro-electric plant, "near" in these days may be a hundred miles, you are extremely well situated to get cheap power. Other big electric power plants achieve economy with stoker fired water tube boilers and big turbine driven generators.

VIEWING THE MOTOR PROBLEM

Now that we have figured out on a cold dollars and cents basis that electric power is cheaper and better for clayworking plants if you can get it, let's look into the motor problem. Electricity isn't half so mysterious as most people think. In some ways it is like water. It has pressure called voltage, and flow measured in units called amperes. The product of the two—volts X amperes = watts. A thousand watts is called a kilowatt or a KW. Electricity is sold by the Kilowatt-hour, or KW.-hour.

In large plants there is a considerable power loss in line shaft friction and belt slippage which can be overcome by using individual motors for the different machines, or for different sets of machines. A 50 H. P. motor will not handle a 10 H. P. load economically. Thus where one machine or set of machines using but a fraction of the total power are run at times when the other machines are idle, i. e. dry pans in a fire brick plant grinding "dry mill" clay, it will pay to provide that machine or set of machines with a separate motor of a power sufficient for its needs only. The accompanying illustrations (courtesy Westinghouse Electric & Manufacturing Co.) show various types of electric motors driving clayworking machinery.

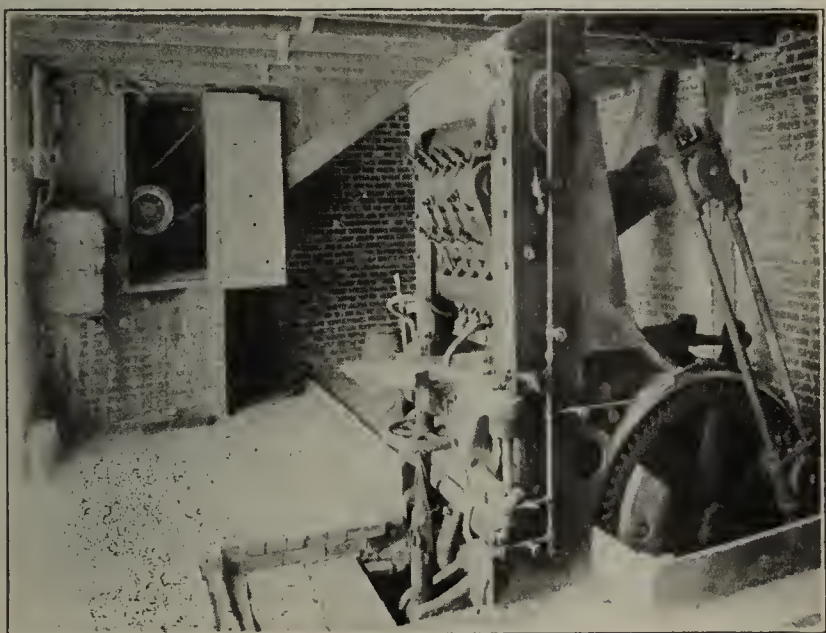


The "Squirrel Cage" Induction Motor Consists of but Very Few Parts Which Are Shown In the Above Illustration. It Is the Simplest Power Unit That It Is Possible to Produce. The Illustration On the Right Is a Squirrel Cage Motor Starter.

There are two kinds of electric current used for power purposes, "direct current," which the electrician lazily calls *DC*, and "alternating current" dubbed *AC*. It is seldom that one has a choice between the two, but direct current motors are not as well suited to the average clayworker's use or as generally used by clayworkers as the other kind. Large direct current motors are seldom found in clayworking plants.

DIRECT CURRENT MOTORS

There are some distinctly good points to direct current motors—the speed is easily variable over a wide range, and the motor will run with acceptable efficiency and without injury at practically any speed. It has high starting torque or turning power which enables it to start the machinery to which it is connected under full load if necessary. It naturally has good pulling-out characteristics, the ability to carry overloads for brief periods. For the clayworking plant however it has some very objectionable qualities. It is a rather complicated and delicate mechanism. For efficiency and safety to the motor itself, the brushes must be carefully adjusted, watched to see that they do not become too short. The commutator must be watched for sparking and scoring. If the brushes get to the point of stirring up a trail of long blue sparks, the cause must be determined at once and remedied, or lacking an extra motor, all or part of a clayworking plant will be shut down to have a commutator turned down.



A Fifty Horsepower Squirrel Cage Induction Motor Driving a Seven Foot Dry Pan, Conveyor and Dry Press Brick Machine.

repaired, and the rotor rewound. All this must be done by experts, frequently, in a distant city.

Unless shielded almost beyond the point of practicability, the D. C. motor will not long survive the gritty atmosphere of the clay plant. The fine particles of grit get under the brushes, quickly scoring and scratching the commutator. The "line loss" is so great with direct current that it is not practicable to convey it any distance for power purposes. The only plants which can use direct current at all successfully, are those making the finer grades of ceramic ware, and which are located in cities where such current is convenient. In these plants small D. C. motors are possibly sometimes especially adaptable on account of variable speed, but even here the alternating current motor is generally used.

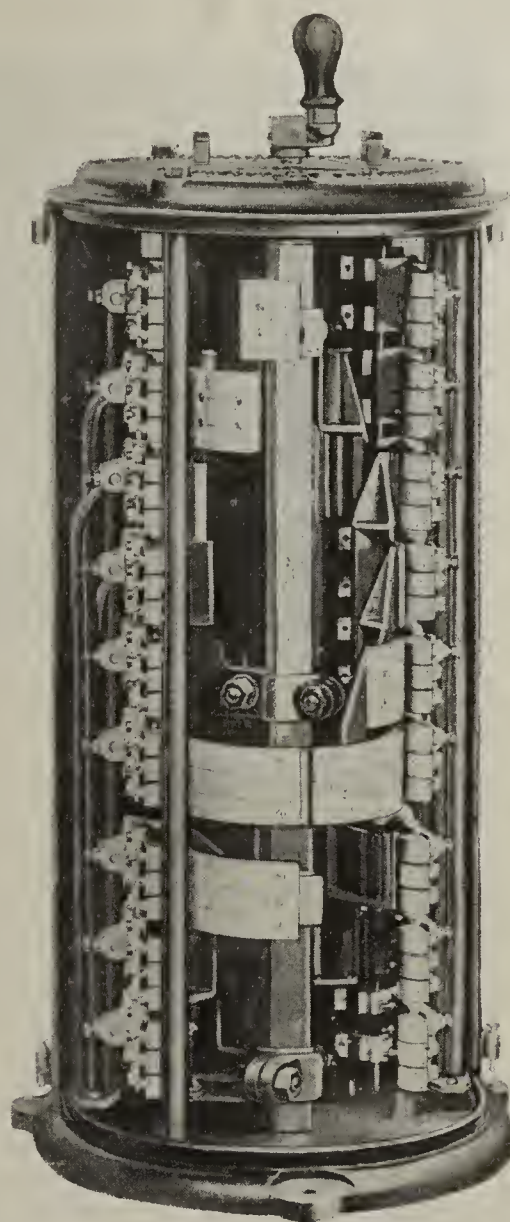
In short, the advantages of direct current motors are adjustable speed, and good starting and "pulling out" characteristics. Its disadvantages are its complexity, wear of vital parts in the presence of clay plant grit, and the cost of getting such current to the more distantly located plants.

While in quest of some details in regard to motors, partly

for use in this article, the writer asked a well known authority on clay works design: "What is the best kind of motor for use in a clay plant?" He unhesitatingly answered: "An induction motor." "But which kind?" I asked. "I didn't know there was more than one kind," he said.

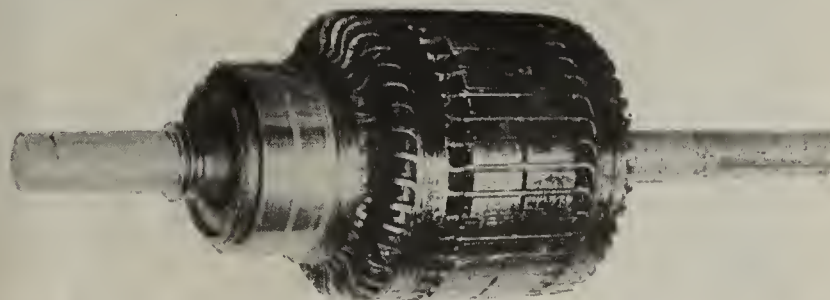
There are three distinct types of alternating current induction motors in general use in clayworking plants. Each has its advantages and limitations.

The one in most general use is the "squirrel cage" motor, so called because of the resemblance of the rotor to the wire cylinder in which caged squirrels exercise themselves. (See illustration.) This type of induction motor is the simplest power unit it is possible to build. It consists of but few parts. These essential parts are: the rotating part, mounted on a steel shaft, called the



A Drum Type Starter With Non-Reversing Drum Controller.

rotor; the part carrying the windings or coils of wire, called the stator; the end brackets and pulley. Assembled, the rotor is held in position inside the stator, with an air gap or space of only a few thousandths of an inch between them, so that the rotor is free to revolve. There are no moving parts except the rotor. The rotor is not connected to the power supply by brush, commutators, or sliding contacts. There is nothing to wear or get out of order but the bearings, which an occasional oiling will keep in perfect condition. It naturally follows from this extreme simplicity of construction that the squirrel cage type of motor is very rugged. They will operate in almost any kind of dirt, dust or grease—some of them in extreme moisture. They require no attention but the oiling any brick yard mechanic can give. If this is not sufficient



A Direct Current Motor Commutator. It Must Be Watched Carefully for Sparking and Scoring.

to recommend them, their first cost is lower than that of any other type of motor of equal power.

With all this wealth of perfection there are some objection-

able features. They require a rush of current in starting much greater than the full load current. Central station power companies object to the use of large motors of this



A Two Hundred Horsepower Slip Ring Induction Motor Driving a Brick Machine at the Ferro Brick Co., Watsonstown, Pa.

type, especially where they have to start under any load, because they drain the power lines too heavily in starting. Even starting without load, there is an appreciable drain on the power lines for motors over 5 H. P., unless a starting resistance is used. These starting compensators are so arranged that by pulling the starting lever forward, after throwing in the power switch, the current is supplied to the motor thru a resistance. As soon as the motor has attained speed, the lever on the starting box is pushed back, which cuts out all of the resistance and throws the motor directly on the power line. Motor can be easily reversed by means of simple connections to a double-throw switch or by changing the terminal connections to the motor. Induction motors are constant speed motors. The average manufacturer's guarantee is for 25 per cent. of rating on overload capacity. If the motor is overloaded it should be carefully watched for heating. The danger to the motor lies in burning the insulation off of the stator windings. Unless specially made this type of motor has low starting power and cannot be used to start heavy loads. This fact frequently disqualifies them for clay plant use. They cannot be made to have a high starting torque without decreasing their efficiency.



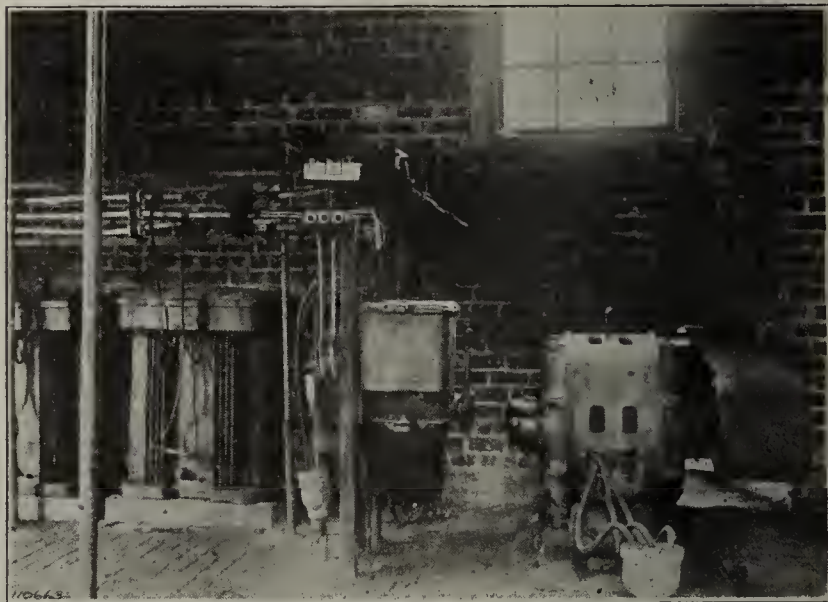
A Thirty Horsepower Slip Ring Induction Motor Driving a Fan at the Ferro Brick Co.'s Factory.

INTERNAL RESISTANCE AND SLIP RING MOTORS

The shortcomings of the squirrel cage motor are overcome by a motor having a wound rotor. With this kind

of motor, a resistance is interposed on the induced current circuit. This resistance is gradually cut out by the operator as the motor builds up speed, and is entirely short circuited, when the motor has attained its speed and load. There are two distinct types of wound rotor motors. First is the internal resistance type. Here the resistance consists of a coil which is gradually inserted within the rotor by a hand lever, bringing the motor up to speed. This motor has the disadvantage in that the starting resistance is not visible, and that if in starting the motor the operator does not push the resistance in far enough, it might easily be burned out.

The more generally used type of wound rotor motor is the slip ring type. In this the rotor windings are brought to slip rings on the motor shaft, and from there are connected to an external controller containing resistance, the resistance being cut out by the movement of the handle of the controller. The slip ring motor has the advantage of having an external controller, so that one can see at all times just exactly what is happening. This also gives it the advantage of being more accessible for repair. The slip ring type of motor can be furnished with a controller, which is so constructed that if the handle of the controller is released in starting up, before the resistance is entirely cut out (by pushing the handle over the extreme limit) it will fly back



A One Hundred Horsepower Squirrel Cage Induction Motor Driving Dry Pans.

automatically, stopping the motor. This is simply an additional protection against burning out the starting resistance, which is not possible with the internal resistance type motor.

With these motors the starting current is practically in proportion to the torque (turning power) developed, so that they can be direct connected to machines without friction clutch, if necessary. There is no objectionable drag upon the power lines. While the constant overload which they will carry is only equal to the squirrel cage motor, the pulling out qualities are much superior—unloading a choked machine, etc. There is very little tendency to wear or give trouble in the brushes of the slip ring motor, because the rings are very strong and rigid, and because there is no breaking of the current under them as in the case of direct current motor brushes. Also the slip rings and brushes do not carry the load current. The wound rotor types (internal resistance and slip ring) are more expensive than the squirrel cage type motors, but this is counterbalanced by their superior qualities, for use in starting heavy loads where friction clutches cannot be used.

SLIP RING MOTOR CONTROLLERS

There are two kinds of controllers in use with slip ring motors. One is known as the face plate or dial starter. This has the resistance mounted on the reverse side of the

dial plate. Essentially, it is the lighter, cheaper type of starter, as regularly built, suitable for running the motor only in one direction (not reversible) (2) The drum type starter, similar in appearance to the street car controller. It has several advantages over the face plate type controller, when used in some conditions, in that it is totally enclosed, the contact has a longer life, and is superior in safety features. Generally it is more suitable for heavy duty use. The most that the face plate type controller has to recommend it, as far as I know is that it is about \$50 cheaper.

Where electric current is available for power purposes it

will generally be found to be cheaper and more satisfactory for operating the clay plant than the independent steam power plant. Even where it is necessary to have steam for drying purposes, it is better, for lower pressure, cheaper or older boilers can be used for supplying heating steam. Of course where the power load is in such proportion to the heating load that all of the exhaust steam can be used for heating or drying all of the time, we are on the dividing line.

A study of your load conditions before installing motors will pay big, when used to govern type and kind of motor selected.



PROBABLE ADVANCE *in* WHOLESALE PRICE *of* HUDSON RIVER BRICK *in* OCTOBER

BUILDING MATERIAL supply dealers have met the request of master builders to close down their yards completely in order to promptly meet the strike situation in the skilled trades with a demand for full cooperation from all mason material producers and distributors, according to The Dow-Service building report of September 2.

There is to be an important conference of the Building Material Dealers on September 3, following the conference of a week ago. In the interim committees are at work among the common brick, lime and cement manufacturers to ascertain the extent of the unity of action that may be expected from sources of supply should such action as requested by the master builders be granted.

In the meantime the price situation is shaping itself for future rather than for immediate building conditions. The same is true of policies regarding supply. Reports from nearly every building material producing center coming to hand at the close of the week betrays none of the uncertainty characteristic of the actual construction market at the week-end. Instead of timidity there is an almost general attitude of preparation for a vast scale of building work. Mills are taking advantage of a slight reaction in order-placing in the consuming markets by replenishing their bins, racks and stacks and some industries, notably cement, steel, plaster, sand and gravel, are wholly devoid of the safeguarding steps as to stocks, and in some cases, even shipments, that are commonly seen when a prolonged strike situation is considered to be imminent.

FORWARD PURCHASING IS AT HIGHER PRICES

In the common brick department this situation is particularly notable. The price situation at \$15, plus the usual charges for handling, cartage, etc., is crowding for higher place in some quarters, but is being held in place for the present by reason of the fact that 1919 brick have not yet moved out of manufacturers' hands. The supply of brick for this market last week was greater probably than in any single week so far this year and apparently all purchases were being moved directly to actual construction work. Forward purchasing of this material, where it is being made, is at a higher price than the current market quotations indicate. The brick manufacturing season is rapidly drawing to a close and the stocks on hand are not more than forty per cent. of normal. It is estimated that there will be little of the new brick of the present year's production coming into this market before the middle of this month so that by October first, common brick prices probably will be quoted on the local wholesale market at an advance over present prices.

In the supplemental building material market the attitude is that of complete confidence. Paints advanced forty cents

a gallon last week. Lead prices have been marked up considerably. Plumbing supplies lead in the general price forwarding movement. Basin, bath and tank supplies will probably be under a new price schedule, showing an advance by to-morrow, and in steam pumps the Gardiner Governor Company has issued a new discount sheet showing material advances from former lists. Sill cocks show another advance and brass fittings are up 15 per cent. All composition roofing is straining toward higher levels. Plumbing supplies in which wood plays an important part report mills booked ahead from three to four months even at the higher prices recently announced, and there is evidence that new business will be accepted at higher levels even than those now prevailing.

In the window glass department reports show that most of the hand operated plants which were scheduled to start the second fire in August are well under way. The production of these plants, however, is practically all sold and with stocks fairly well exhausted, especially in the small sizes, a shortage is generally looked for. Prices are not likely to advance, however, for some time, the exact date being set for some time in November. Buying is active, subject to mill acceptance even now and there is an increasing tendency among jobbers to stampede those mills that have any capacity still unsold. There is a possibility of obtaining box cars which will further hamper deliveries.

CAR SHORTAGE INCREASINGLY HARASSING

This problem of car shortage is becoming an increasingly harassing one to supplemental building material distributors here, and, in fact, all thru the East. This condition affects particularly the cement interests even now.

Generally speaking the building material industry was inclined to assume a more hopeful attitude with regard to the autumn building movement as the week closed. Returning vacationists are already quickening the demand for homes, which, in the light of the present housing shortage, will tend to force a prompt decision regarding labor wage stabilization. There is a noticeable tendency on the part of manufacturers of all kinds to hasten production in anticipation of the January inventories which may be prolonged in order to assist in the general wage stabilization plans.



Alliance Brick Co. Builds New Plant

Work has been started on one of the most complete and thoroly up-to-date brick plants ever erected in Ohio, located on the east side of South Mahoning Avenue. This will be plant No. 2 of the Alliance (Ohio) Brick Co. and is being built to help care for the ever increasing demand for the

company's famous Alliance ruff-texture brick.

The kilns will be of the producer-gas continuous type. By the continuous gas-fired method of burning considerably less coal is used than by the old coal-fired periodic kiln method, and a much finer, cleaner product is obtained. A very great saving in labor is also effected and a very high percentage of first grade ware is produced.

Thirty acres of splendid shale land lying just west across Mahoning Avenue from the new site of plant No. 2 of the Alliance Brick Co. has been purchased from W. H. Purcell and F. A. Hoiles, as a source of supply. This will be adequate supply for more than a century of brick-making, it is stated.

By resolution of the board of directors, the capital stock of the Alliance Brick Co. will be increased to \$500,000. None of the new stock will be offered to the public, same being taken up by the old stockholders.

It is expected that the new plant will be in operation early in 1920.



Ohio Sets Record for Brick Roads

Record for contracts awarded for brick highway construction has been set in Ohio so far during 1919. According to latest figures 80,000 square yards of pavement of this character have been contracted for. In the opinion of officials of the National Paving Brick Manufacturers' Association no other state in the country can equal this accomplishment. The progress has been largely due to the activity of the Ohio State Highway Commission. This is in marked contrast to paving work in Indiana and Illinois, according to latest figures, for the latter states have awarded practically no contracts calling for brick pavement.

Will P. Blair, vice-president of the National Paving Brick Manufacturers' Association, plans the preparation of a statement on the activities in Ohio, compared with those in Illinois and Indiana, with a view toward the latter states profiting by the activity in Ohio.



Sends Brick Roads Message Across Continent

Paving brick men should certainly take off their hats to the crop of brick road boosters that seems to grow in the vicinity of Bucyrus, Ohio. They never miss an opportunity apparently to see that brick roads are brought to the attention of the public and they seem to reach out in an ever-widening circle, not being satisfied to boost brick locally but are always alert for opportunities to spread the gospel



The Army Train of Trucks Stopping on a Stretch of Good Brick Road Near Bucyrus, Ohio.

of goodness in road building to the people of all the United States, if not the earth. One of the latest stunts down at Bucyrus was to attach a banner to one of the big army trucks which the Government sent from Washington to the

Pacific Coast over the Lincoln Highway. Consent of the truck train officials was secured to send a good roads message to the Coast from the people of Bucyrus and so a big banner was painted for each side of the truck. Here is the message the Bucyrus people sent: "Bucyrus, Ohio, People Believe in the Lincoln Highway. We are Paving it with Brick Across Our County and State."



Showing How the Army Trucks Were Used to Advantage to Boost Brick Paved Roads.

And that is just what the Bucyrus people are working for—a brick paved Lincoln Highway across their county and state—and the way they are going about it there is good chance of their getting what they are boosting for, as the brick road across their county is already built, is being built or is under contract—22 miles of it—and in Ohio just about an even 100 miles of the Lincoln Highway are brick paved. If every community would do as well as Bucyrus in its appreciation of the quality and advantages of brick roads, the paving brick men would be compelled to work 24 hours a day—but then there isn't a firm located in every community to sow the right kind of brick road seed as has been done in Bucyrus, by the American Clay Machinery Co.



Pottery Specialty Plant Enlarges

E. H. Haeger has purchased the Haeger Brick & Tile Co.'s plant at Dundee, Ill. and formed a company known as The Haeger Potteries, Inc., capitalized at \$75,000. This factory has been used for the making of pottery during the past five years and work has begun on the erection of another large glost kiln which will permit an output double that formerly made.

The concern is more than busy with orders and has recently brought out some new designs which are said to be equal to the best ware made in either this country or England. In addition to vases, flower bowls, fruit bowls and other tableware, a line of advertising novelties is being made such as match holders, and ash trays decorated with the names of advertisers. The plant is equipped to do all kinds of decorating work either in decal decoration or hand painted.

Products of this company have sold thruout the United States and arrangements are being made to develop an export trade. Offices and show rooms are now maintained at 200 Fifth Ave., New York City.



"We must have production if we are to have lower living costs.

"Prices are not coming down in America. The man who is now husbanding his resources upon the theory that prices are going to take a tumble may succeed in washing his shirt into shreds before he can buy a much cheaper one."

NEWSPAPER ADVERTISING COPY that PULLED INQUIRIES

*Well-Known Clay Products Concern Gives Some Hints
on How Newspaper Publicity Can Be Made Profitable*

IT WILL BE REMEMBERED that in an article which appeared in the July 29 issue of *Brick and Clay Record* entitled, "Manufacturers' Views on Newspaper Advertising," there were set forth opinions from twelve different manufacturers on newspaper publicity. Since publishing the above, we have received three more letters, all of which are of interest to the clay products men, but one of which gives some particularly constructive information.

At this particular time, in view of the proposed advertising campaigns to be carried on by the various national associations in the clay industry, the subject of newspaper advertising is of immediate interest. Most of the publicity work to be conducted by the national associations will be in the form of promotional campaigns for clay products, and the copy will appear chiefly in the national magazines. The individual concerns will then have to make plans for themselves on how to capitalize on this work. There is no doubt but that it should be followed up by some individual advertising such as newspaper copy, for instance, to tie-up the promotional work with each particular manufacturer. Hence, the method of handling copy that will produce results is an extremely pertinent question. Some very valuable information

along these lines is given by a prominent clay manufacturer in what follows.

In regard to newspaper advertising, B. J. Cummins, president of the Cummins Brick and Tile Co., Syracuse, N. Y.

says: "In our opinion, national advertising is what the brick interests need to cultivate a desire and create a demand for brick construction. Local advertising would then be more advantageous than at present."

The Cleveland Builders Supply and Brick Co. have divulged the following information in reply to a letter asking their opinion on results obtained from newspaper advertising.

"It is very hard to trace any direct results to newspaper advertising, as the average purchaser has been solicited by a salesman. Occasionally some one refers to a newspaper advertisement but generally it is an owner who wants a few sacks of this or that to do some patching. We feel that the greatest value of newspaper publicity lies in keeping the company's name before the general public. We try to have our ads on the same page in the paper as the building and real estate news appears, as we find that builders read these columns."

Proof that effective newspaper advertising will produce results and does pay

Industrial Homes Built of Hollow Tile

On account of economy in construction, wonderful durability, and low cost of insurance and upkeep, Hollow Tile is going to solve many industrial housing problems.



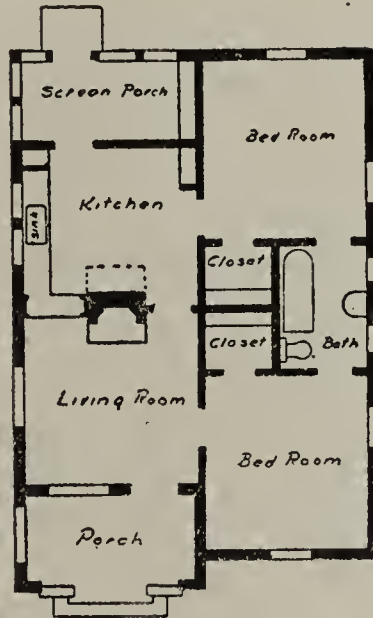
Hollow Tile houses are cooler in summer and warmer in winter. They are not expensive to build and are becoming more and more popular as their advantages are known.

THE two Hollow Tile houses shown in this advertisement are a part of a large group of modern homes designed and constructed by the Los Angeles Pressed Brick Company in connection with the townsite at Alberhill.

A large, well-known concern in Southern California, having had under consideration for sometime a housing problem for its men has, after a thorough investigation of various building materials, decided to erect thirty houses using L.A.P.B. HOLLOW TILE.



Climatic conditions both here and on the desert are particularly hard on paint. Hollow Tile houses do not require painting thus eliminating an item of first cost as well as future upkeep.



The above floor plan of an industrial worker's home is merely a suggestion and could, of course, be increased, decreased or changed to meet individual requirements.

Plants at
Los Angeles,
Santa Monica,
Alberhill
and Point
Richmond.

**LOS ANGELES
PRESSED BRICK CO.**
402-414
Frost Bldg Los Angeles

Agencies
in Principal
Pacific Coast
and Other
Western
Cities.

The Above Advertisement Appeared in the July 6, 1919, Issue of the Los Angeles Sunday "Times," Occupying One-sixth Page Space. It is This Particular "Ad" Which Drew So Many Inquiries.

is found in the experience of one clay products manufacturer on the Pacific Coast. The Los Angeles (Cal.) Pressed Brick Co., has been running a campaign in local newspapers for several months using various size space from one-

latest. New equipment has been installed. At present the capacity is uncertain, but the plant will be operated at full speed from the start. Common brick only will be made for the time being.

Actual construction of the first unit of the plant of the recently organized Superior Brick Co., of which James F. Aten is president, has been started with the turn of the month, and the promise that initial production of common brick will start before the first of the new year seems likely of fulfillment. The company, which was incorporated for \$200,000, has sold 80 per cent. of its stock, and the balance will be sold before the end of September, according to Robert C. Mitchell, one of the directors, who has had charge of the stock distribution. Plans of the company call for an initial daily production of 150,000 common brick.

According to Mr. Mitchell this will go a considerable way toward relieving what promises to be a continued shortage of common brick in the Cleveland district. He points out that consumption here has increased to such proportions in the last few months, that other points outside this territory are being drawn upon to the extent of 250,000 common brick a day to augment the local production and distribution. Much of this increased demand can be traced to the propaganda advocated by the different brick organizations for permanent construction, and also because of the almost sensational increases in lumber prices since June 1, says Mr. Mitchell.

"Much credit for the big business the industry in this section is enjoying now is due to the activities of Ralph P. Stoddard, secretary-manager of The Common Brick Manufacturers' Association," says Mr. Mitchell. "His work in that organization, and with the S. A. F. E. here, toward educating the public in that the extended use of brick means safety from fire, is now bearing fruit after four years hard effort in that field."

The Superior Brick Co., according to Mr. Mitchell, has enough clay in connection with its plant operations to last 33 years, on a basis of 100,000 common brick a day, or 30,000,000 a year.

Example of the condition of supply and demand in brick in this section is given by J. E. Morrissey, manager of the brick sales departments of the Cleveland Builders Supply & Brick Co. This firm alone, according to Mr. Morrissey, has orders for 1,250,000 brick a day, and can deliver about 700,000 a day. "The material is going out practically as fast as it comes in, and so far there is no chance of stocking up in yards, while yards are practically bare of material," says Mr. Morrissey.

Concentration on one line of production until something like relief from present shortage is realized, is planned by the Hydraulic-Press Brick Co. for the Cleveland district. For the time being only the "Bokhara" brand manufactured by this firm will be made, the balance of the brands from the South Park plant being temporarily withdrawn from the market. "There is a demand for practically only one kind of brick, common," says O. R. Leach, service director of the Hydraulic. "In spite of all the efforts of manufacturers, however, and the large amount of building actually done to date or in prospect, construction here is still about 50 per cent. below normal."

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D. Knickerbocker Boyd, of the Architectural Service Bureau, which is composed of Mr. Boyd and other architects whose aim it is to carry to the architectural profession the things that the profession wishes to know, has been led to interest himself and his organization in brick construction, and is now studying bonds, joints and mortar colors, as well as designs. Mr. Boyd is an architect of considerable experience.

Anyone of these attractive Hollow Tile Houses can be duplicated in Los Angeles, for approximately \$2,000.00.

Hollow Tile Houses ERECTED AT ALBERHILL

THESE two interesting street scenes tell their own story. Whether it is an industrial housing problem, a City Mansion, or Bungalow, Hospital, School, Apartment House, Garage or Gasoline Station, the answer is always the same—

BUILD WITH HOLLOW TILE

Hollow Tile comes shored for stucco or smooth face, in a variety of colors. Hollow Tile is easily and quickly constructed. Requires no painting or repairs—low insurance rate.

NOTICE For floor plans and other detailed information, call at our office.

Los Angeles Pressed Brick Co.
Fourth Floor, Frost Building,
Corner Second and Broadway,
Los Angeles, Cal.

The August 3, 1919, Issue of the Los Angeles Sunday "Times" Contained the Above Advertisement Which Occupied One-quarter Page Space.

fourth to one-sixth or sometimes less for their copy. This firm states that it has received a good many inquiries from one particular advertisement in which a view of a hollow tile, tile-roofed house in which its material was used, together with floor plans, was illustrated. These inquiries were received in person, by telephone and by letter, requesting information as to the cost and asking for instructions relative to building problems of each individual. Some were anxious to study the full size floor plans.

"Advertising of this character," states the Los Angeles Pressed Brick Co., "will show the amount of people interested. Aside from such direct and traceable results as has been mentioned above, we believe it is good business to keep the firm's name constantly before the public. This means advertising not once in six months or even once a month, but at least once a week. Oftener than once a week would be even better."

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Early Increase in Production of Brick Seen for Cleveland District

Plans by various interests in brick production and distribution in the Cleveland, Ohio, district, now under way, will make for early increased supply of brick to meet what now promises to be an unprecedented winter demand. Foremost among the operations to that end, as announced by E. W. Farr, director of production of the Cleveland Builders Supply & Brick Co., will be the resumption of operations at the famous old Newburg brick plant, which was idle the greater part of the time during the war period. Alterations and improvements have been under way for the last few weeks, looking to establishing this plant upon a maximum productive basis. According to present plans, says Mr. Farr, the plant probably will be in operation by October 15, the

INDUSTRIAL DEMOCRACY— HOW *it* WORKS

Head of Large Concern Where Plan Has Long Operated Tells of Results

Note.—The largest employers in America are eager for the fullest information on the actual, practical experiences of companies which have put into operation the Industrial Democracy plan devised by John Leitch. All sorts of questions are being asked by concerns which feel that they may, if the thing checks up satisfactorily, seriously consider adopting the plan. This article, written by the head of the largest tobacco pipe plant in the world (Leipold Demuth, President Wm. Demuth & Co.) where Industrial Democracy has been in force for two years, gives brief, specific replies to the questions most frequently asked. Mr. Demuth remarked to the editor that, in addition to all that he had here set down, Industrial Democracy had done something else: It had made a broader and better man of him.

The editor of "Forbes" attended sessions of the Senate and House of Representatives at the Demuth plant. It was intensely interesting—and intensely human.—B. C. Forbes, editor of Forbes Magazine.

THE constantly increasing inquiries from leaders in various lines of business thruout the country evidences the growing public interest in the plan of Industrial Democracy at the Demuth plant. These inquiries include requests for a brief description of our community of interest plan and of our experience with it. They can perhaps best be answered in a general way for the benefit of American manufacturers and employes by taking up a few of the different questions generally asked by our correspondents.

Is the plan still an experiment or has it been satisfactorily worked out?

It has been in operation for two years, and while we are continually making minor improvements in our organization, nevertheless we have actually tested the plan under circumstances which leave no doubt in our minds as to its success.

What is the central idea?

It is a system of self-government modeled upon our own Federal Constitution and National Government by which our nine hundred men and women employes at Richmond Hill, New York, have a voice in the running of the plant.

Just what is the system of representation?

The representation follows closely upon the lines of our own National Government. There is a Cabinet, a Senate and House of Representatives. The Cabinet and Senate are not elective bodies; the members of these bodies hold their places by virtue of their positions in the business. The Cabinet is composed of the executives of the company and the Senate of the foremen and heads of departments.

The House of Representatives, as in the case of the administration at Washington, is the popular body. It is elected by secret ballot by the whole body of workers. There is approximately one representative for every thirty workers, and each department is represented. The only qualifications placed upon the men or women elected are that they speak

and understand the English language, that they shall have been in our employ for at least one year, and that they be "on the level."

What is the method of procedure of transacting the business of the firm in connection with the House and the Senate?

As in the case of our National Government, rules have been established by which the House and the Senate do their business. Meetings are held once a week by each body separately. Each body elects its own officers and appoints standing committees to which are referred all prospective legislation. When these committees make their report, the subject in question is thoroly and openly discussed, and if any legislation has been passed or recommendations made, the matter is brought to the next body for its action.

Naturally, to become a law, a bill must first pass both the House and the Senate and also receive executive approval.

What happens when the House and Senate pass a bill and it is disapproved by the Cabinet?

No such situation has yet arisen in our two years' experience. The Cabinet has the power to veto, but to this date has never exercised this power, there having been no need for it.

What are the Representatives' duties?

The Representatives in the lower House act as counsellors within their departments. They receive and transmit to the House all suggestions and complaints, and they are also responsible for keeping their fellow-workers informed as to what takes place at the weekly sessions of the House.

How can legislation be initiated except by being introduced by a member of the House?

The Cabinet can initiate legislation by means of a message to the Senate or the lower House and the same opportunity is open to the Senate.

How was the Industrial Democracy installed?

The Industrial Democracy plan was brought to the attention of the firm and employes by John Leitch, a business engineer of Philadelphia, who, at a series of general mass meetings attended by the members of the firm as well as by the employes themselves, discussed the necessary foundation stones of a new business policy, starting with Justice, Cooperation and taking in Economy and Energy, with the final keynote of Service. After accepting this business policy as a guide for our work and actions, we started to govern ourselves under this new dispensation with the understanding that all rules and regulations affecting the employe were to be in the hands of the legislature subject to the confirmation of the Cabinet.

Did you have any trouble in introducing the plan?

Frankly, at the outset, some of the workers received the idea rather coldly; others viewed it with more or less suspicion. The interest of all was aroused, however, when presently it was explained to them that if, by reason of any co-operation induced by this plan, there was a saving in the cost of production, such saving, whether in overhead or because of larger production, would be divided equally between the com-

pany and the workers. And when at the end of two weeks we were able to declare a 6½ per cent. dividend and thus give them concrete evidence of our sincerity, they warmed up to the idea and were enthusiastic in their endeavors to make the experiment a success.

Was the plan introduced because of the fear that labor trouble was imminent?

Emphatically no. We have had no labor trouble in our business for many years and did not fear any at the time we started this plan. It seemed to us the wise and liberal, as well as a paying policy. We had been established for over fifty years, and when the growth of our business made intimate relationship between the employer and employe impossible, we realized that only thru giving the worker his say in the running of the plant could we get the cooperation so urgently needed to further promote business. Before then the labor leader had been the only teacher of the workingman and we knew it would pay us to endeavor to educate him in a way that would teach him the value of cooperation.

Do you believe any profit sharing plan would produce the same results?

We believe that profit sharing is one method, and ours, based upon actual performance of the worker, is another. The profit sharing plan has many worthy features, but we do not believe that many workmen understand the inevitable variation of the percentage of profit. Furthermore, we do not believe that he should be made to suffer for any losses connected with sales, finances or raw merchandise investments, all of which are beyond his control. Our plan is based upon a saving accomplished by the worker in both production as well as overhead. Furthermore, under our plan, whereby we give our employe his dividend every two weeks—incidentally in a separate envelope marked "Employe's Dividend"—he does not have to wait for what seems to him the indefinite future to learn whether or not the employer is living up to his promises. He can watch his dividend grow larger or smaller, and soon he will begin to learn that when every machine is running all the time he makes more money than when his fellow workers take holidays and machines are left idle. Thus he comes to know that cooperation means a larger pay envelope.

Is Industrial Democracy suitable to any business?

Of course, every business has its own individual problems and no system laid down will be universally applicable. But it is our opinion that the principles can be made to fit in any organization employing labor to any extent.

Has not Industrial Democracy undermined your authority, the authority of the employer?

No. It has not in the slightest impaired the authority of the employer. On the contrary that authority has been strengthened by reason of the fact that no important action is taken without the approval of the employes thru their Representatives, and today in our plant anyone inclined to be troublesome must reckon with the force of the opinion of his fellow workers, which is a most powerful factor.

What effect, if any, has the plan had on the labor turnover?

As a result of our Industrial Democracy, our labor turnover has gone down to a point where it is not a serious factor with us. During the height of the war, when high wages in the ammunition plants were tempting workers, and our neighboring manufacturers were feeling the shortage of labor, we fortunately had the interest of the men themselves in this problem. Knowing that lack of help would reduce their dividends, our employes saw to it that their fellow-workers stayed with them, and their friends were brought in to fill any vacancies.

What effect has your Industrial Democracy had on the cost of production?

Frankly, we cannot say specifically whether or not Industrial

Democracy has reduced the costs of production during the last two years; our costs have risen, as we expected they would, due to the same conditions which affected everyone else. We did not in the beginning have any illusion that Industrial Democracy would keep our costs down to pre-war basis. How much lower they have been than would have been the case if we had not had Industrial Democracy is largely a matter of speculation. We honestly feel that we have benefited distinctly from this point of view. We are convinced that under the old system, the difficulties with employes suffered by many other firms, would have increased costs far beyond the point to which they did rise.

What is the biggest and most difficult task in the installation of Industrial Democracy?

The biggest and most difficult task in the installation of this plan is establishing confidence between worker and executive. Without the cooperation of the whole body of workers, the idea must fail, but our experience has been that when employes are once convinced of the company's sincerity this cooperation is given wholeheartedly. Our dividend system, whereby the workers receive bi-weekly additions to their regular pay, is a powerful factor in gaining this confidence.

Are you able to give an example of how any one move suggested by the employes has reacted to the benefit of the firm itself?

Yes. Take the questions of hours of employment. We were working fifty-three hours a week. At one of the meetings of the lower House, it was suggested that the working hours be reduced to fifty without a loss of production and a certain saving in overhead. The subject was argued from every possible angle. Finally, all three bodies came to the conclusion that they would try it out. If the experiment resulted in any loss of production, the workers agreed to go back to the fifty-three hour week. Everyone pledged himself to a full, honest fifty-hour service, promising to avoid tardiness and idle machinery. Before the trial period was over the production was increased by about eight per cent., which meant better income and saving for all concerned. A few months ago the Cabinet suggested to the men that as long as the first change of hours worked out so successfully, the House and Senate should consider the advisability of changing to a forty-eight hour week. After quite some deliberation, the new schedule was accepted, and we are now working forty-eight hours without having decreased the production.

What effect has the community of interest idea had upon quality production?

Many of our men are piece workers. Some were in the habit of rushing their work so that they could make the most money regardless of the quality of their output. At the meetings of the lower House, the Representatives of the workers learned that this policy was lowering their dividends, for it was resulting in a great many seconds and thirds, and a large amount of waste. The Representatives brought home this fact to the workers, who began to realize that any gain made by rushing their work was more than offset by the loss in dividends caused by this method. Consequently, they soon began to turn out better pipes.

Another important factor in raising the standard of quality is that, by reason of him having a voice in the management of the plant, the worker takes more pride in the product, as in the case of the craftsmen of old.

Can you give an instance of how the community of interest idea has aided or is aiding in the work of Americanization?

Yes. We had many foreigners in our factory. The House of Representatives brought forth the point that the inability of many men and women to understand English was a

handicap to the business in that they sometimes misunderstood what was told them. So in connection with the Board of Education of New York City, they established English-speaking classes. There again we applied our 50-50 principle, as time spent in these classes is one-half company time and one-half employee's time. Besides the English language, we are touching the first principles of Americanism. We point with pride to a record of ninety-five applications for citizenship papers which our employment manager filled out a few weeks ago.

Name one of the important results, if not the important result, of the community of interest idea?

From the human standpoint the most pronounced and satisfactory result—the one thing more than any other that has made it seem worth while—is that our Community of Interest idea has helped to make better men and women. It

has increased their self-respect, for they feel that they are now being treated not as "hands" but as men and women. Consequently, one and all take pride in their factory, pride in their labor and pride in their product. Naturally, too, our Community of Interest Idea has made life more worth the living, in that employees, and ourselves as employers, now occupy the most happy relationship to each other. From the business point of view solely, the Community Idea has developed a new and remarkable teamwork thruout our whole organization, with the result, as already stated, that we are making better pipes and more of them.

What cannot be accomplished by an organization building with the principles of Justice, Cooperation, Economy, Energy and Service! With that kind of foundation, it seems to us that almost any kind of accomplishment within reason is possible.



NOTES *on* HANDLING PROMISSORY NOTES

IT FREQUENTLY HAPPENS that the business man is not conversant with modern methods of accounting, and as a result of this does not keep a proper record on his books of the notes receivable and notes payable. The entries for these items are not neglected because he is of the opinion that it is not necessary to keep a record of them, but rather because he is undecided as to how the records should be kept. He realizes that his notes receivable are an asset and should therefore be included among the listed assets on his balance sheet or financial statement. He also knows that the notes payable are a liability and should be listed on the balance sheet as such.

One business man who always has a number of notes on hand makes no entry for these items on his books, but keeps the notes in the safe until the date of maturity. When a note is paid he then credits the open account on the ledger, which had not been credited at the time the note was received in payment. When a note is paid in part only and a renewal note is received for the balance due, he then credits the open account with the amount of cash received in part payment of the matured note. In this manner the open accounts do not receive the full credit until the notes have been paid. As a result of this policy his financial statement does not show the exact status of his assets. He usually has on hand notes for approximately one-fourth of the amount which he lists as accounts receivable.

LIST NOTES RECEIVABLE SEPARATELY

A note is a higher form of indebtedness than an open account, for the note itself is evidence of the amount due. In suing on an open account, however, it is necessary to prove the correctness of all the items in the account. A note is also paid more promptly than an open account. For this reason the financial statement will make a better showing when the notes receivable are listed separately instead of including these items with the accounts receivable.

Another dealer who discounts all his notes receivable has evolved the simple method of crediting the maker of the note with the face value, in the cash book, and charging interest on the disbursement side of the cash book with the amount of discount charged by the bank, thus keeping his cash account in balance. In this manner the customer's open account receives the proper credit, but there is no account on the ledger to show the amount

of the notes under discount at the bank. Such an account should be kept for discounted notes, because when a note is discounted a contingent liability is created. Such a liability should not be confused with notes payable. A note payable is a direct or positive liability, while a note receivable discounted creates a secondary or contingent liability, due to the fact that the maker of the note may not be able to provide for its payment at maturity. This will make the person who discounted it responsible for its payment to the bank.

UNIFORM METHODS RECOMMENDED

Thus it will be realized that many business men have their own peculiar methods of recording note transactions, which, while very simple, are not in agreement with good or approved accounting principles. The reason for this wide divergence in bookkeeping methods can be understood more readily when it is known that the average business man's training and experience have been along lines of salesmanship, rather than along accounting lines. However, at the present time there is a universal demand among business and trade organizations for uniform systems of bookkeeping, and there are many business men who will be interested in knowing how to keep these accounts in accordance with the methods recommended by accountants.

For purposes of illustration we will assume that John Jones sells to Henry Sutter a quantity of material for which Mr. Sutter agrees to pay with a promissory note for \$500, due two months after date. This is a note receivable on the books of John Jones, and a note payable on the books of Henry Sutter. As soon as Jones receives this note in payment of the material he credits Sutter's open account with the amount of the note, having of course previously charged this account with the value of the material sold. Such a credit will be in the form of a journal entry, as follows:

Dr. Notes Receivable.....	\$500
Cr. Henry Sutter.....	\$500
Received from Henry Sutter in payment of account two months' note dated.....	

John Jones' ledger now shows that he has in his possession a note which he received as payment of an open account. It also shows that this part of his assets has been converted from the non-liquid form of an open account in the liquid form of a note receivable.

Mr. Jones discovers that he is in need of funds with which to pay a number of his own obligations, so he decides to have this note discounted at his bank. The bank discounts the note, which Jones endorsed, and informs him that the proceeds, \$495, have been placed to the credit of his account at the bank.

This is a separate transaction and requires another entry. Before making this entry it is advisable to consider this transaction in detail. John Jones' first impression might be that since the note is no longer in his possession, all that he will need to do is to credit the notes receivable account, in the cash book, with the amount of the note, and then charge interest account with the amount of discount charged by the bank. Such an entry would be evidence that the note had been paid, which is not the case. While the note is no longer in Jones' possession, nevertheless his liability does not cease until the note has been paid. The bank has merely loaned Jones the money and the note is held by the bank until paid in order to secure the loan. Jones is in fact still the owner of the note, and the fact that the bank has loaned him money on it signifies that he has thereby created a secondary liability. This liability should be shown on the books, as evidenced by the journal entry shown:

Dr. Cash in Bank.....	\$495	
Dr. Interest	5	
Cr. National Bank (Disct. Acct.).....		\$500
Note of Henry Sutter maturing..... discounted at the National Bank.		

The total of the National Bank (discount account) should at all times show the total amount of notes receivable under discount. When notes are discounted at more than one bank a separate discount account should be kept for every bank.

When Henry Sutter's note matures and is paid by him, then Jones will make the following journal entry, which will remove this item from the assets, and also from the contingent liabilities:

Dr. National Bank (Disct. Acct.).....	\$500
Cr. Notes Receivable.....	\$500
Note of Henry Sutter maturing this day has been paid.	

When these entries are made in the proper order for all note transactions the ledger will at all times show the exact amount of contingent liabilities for which Jones may be held responsible, should his customers default in the payment of their notes. If these accounts are not kept the financial statement will not disclose the true facts concerning the financial status of the business.

Should Henry Sutter fail to make payment of the note at its maturity, the bank will then charge the amount of the note to John Jones' account or look to him for payment. In such a contingency the entry Jones must make will be as follows:

Dr. Henry Sutter.....	\$500
Cr. Cash in Bank.....	\$500
Note of Henry Sutter maturing.....re- turned to bank unpaid.	

In this manner Henry Sutter's open account will then be charged with the amount of the note unpaid. If John Jones then brings suit to enforce payment, such action will not be to recover for the original bill of material

sold, but for payment of the note, as the note is evidence of the amount due and needs no supporting data.

There is a supposition prevailing that notes may be termed either as notes or bills. This is an erroneous idea. There is a difference between notes receivable and bills receivable. On Jones' ledger the term bills receivable would be used to designate the bills rendered to customers for purchase made, and which are unpaid.

Trade acceptances may also be classed as notes, and the entries may be made in the same manner as shown for notes.

NOTES PAYABLE

John Jones owes Wood & Co. \$800. He has made arrangement whereby this firm agrees to accept his promissory note in payment of the account. When Jones issues the note he makes the following journal entry:

Dr. Wood & Co.....	\$800
Cr. Notes Payable.....	\$800
Amount due Wood & Co. paid with my two months' note dated.....	

As this is a direct liability no other entry is required. This entry shows that the amount of indebtedness has been transferred from one liability account to another. A note payable is a higher form of liability than an account payable.

When Jones pays this note at maturity the following journal entry will be required:

Dr. Notes Payable.....	\$800
Cr. Cash in Bank.....	\$800

Should Jones have occasion to discount his own note at the bank, the entry covering such a transaction would be:

Dr. Cash in Bank.
Dr. Interest.
Cr. Notes Payable.

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August Building Operations Hold Up Well

The building contracts awarded during the month of August, 1919, in the territory north of the Ohio and east of the Missouri rivers, according to statistics compiled by the F. W. Dodge Co., amounted to \$267,261,000. This figure, altho 13 per cent. under the total for July, 1919, indicates an increase in building activity of 63 per cent. over the average for August of the five years previous to 1919.

The August figures bring the total amount of contracts awarded during the first eight months of 1919 up to \$1,565,489,000, which is a greater amount than has been recorded for the same period of any previous year. This figure is 40 per cent. in excess of the average figure for the first eight months of the five years previous to 1919, if figures for those years be estimated in terms of 1919 building costs.

The figures for contract awards up to September first indicate a banner year in building operations. The crest of the curve was passed in July, but delays in operations due to labor troubles, shortage of materials in certain localities, and other causes have occurred. Consequently, it appears likely that actual construction has yet to reach its maximum volume and that the building season will be necessarily prolonged as far toward the close of the year as weather conditions will permit.

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"You've got to leaven your work with some planning and thought. A fireless cooker doesn't do the business until heat is applied."

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products Such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

CERAMIC DAY TO BE HELD AT FIFTH NATIONAL CHEMICAL EXPOSITION



CHICAGO will be the scene of the Fifth National Chemical Exposition this year which bids fair to outstrip all former attempts. Previous to 1919 all exhibitions were held in New York City where they have been highly successful, but this year the exposition will be held in the Coliseum, Chicago, during the entire week of September 22-27.

Meeting jointly with this exposition will be the American Ceramic Society, the American Electro Chemical Society, the Technical Association of Pulp and Paper Manufacturers, the American Steel Treathers' Society and the American Mining and Metallurgical Engineers.

There are to be symposia and discussions in these various meetings and there will be a large number of papers read at the different societies that will be of interest to ceramists. A few of those listed for reading and which should prove instructive to clay men are: "Blast Furnace Refractories," by Raymond M. Howe; "Effect of Sulphur in Coal Used in Ceramic Industries," by C. W. Parmelee; "Recording Thermocouple Pyrometers," by Lee Behr; "Porcelain for Pyrometric Purposes," by F. H. Riddle; "Temperature in the Manufacture of Pottery," by F. K. Pence. There are also other papers which should prove of equal interest to ceramists.

Of course, the exposition will be going on at full tilt during all these frequent intellectual activities. The whole occasion was planned on a large scale and it will be a revelation to many to see the importance of chemistry including ceramics to industry.

CERAMIC DAY, SEPTEMBER 24

Ceramists will be chiefly interested in the activities of "Ceramic Day," which will be on Wednesday, September 24. A program of technical papers, a banquet and motion pictures are included in the festivities for that day. The morning session will begin at 10:00 a. m. with Professor Chas. F. Binns leading off with a talk on "The American Ceramic Society, Past, Present and Future." "Buy on Analysis" is Dr. Alexander Silverman's address which is second on the list. This is to be followed by an interesting topic entitled, "Superior Refractories," by Ross C. Purdy.

"The Making of Pottery," by Frederick H. Rhead, is the fourth paper arranged for on the morning's program.

In the afternoon the session will open up on "General Types of Optical Glass," by Robert J. Montgomery; "Brick and Tile," by Douglas F. Stevens, is second on the list. A. V. Bleining is also on the program. He has for his subject, "The Application of Scientific Methods to Ceramic Research." The final paper listed on the program thus far made up, is that of J. S. Hostetter on "The Manufacture of Optical Glass." Other addresses at both morning and afternoon sessions will be delivered; however, the titles of these are not at present ready for publication.

All members and friends are urged to attend the dinner on Wednesday evening at 6:00 p. m., which will be held at the New Southern Hotel, 1250 Michigan Boulevard. This hotel is only a short distance from the Coliseum. A large private dining room has been arranged for and there will be plenty to eat. Also, there will be some pep stirred up at this dinner, according to plans, and the committee sends out the advice to rehearse the popular songs before you come. Tickets for this evening will be \$2.00 each, and you can secure them at the Society's booth during the day, September 24.

The evening session of "Ceramic Day" will be given over to the watching of movies. Starting at 8:00 p. m. motion pictures on the following subjects will be shown: "Making Cut Glass," "Glass Bulb and Tubing Manufacture for Mazda Lamps," and "The Glass Making Process."

A. C. S. HAS BOOTH

Headquarters for the American Ceramic Society thruout the exposition week will be at Booth 229, at which a representative of the Society will be in constant attendance. It is urged that all members make their headquarters at the booth and everyone who is in any way interested in the silicate industries will be most welcome. Members in charge of the booth will endeavor to assist any visitor in obtaining information he desires. Literature regarding the ceramic industries and the American Ceramic Society will be available at the booth. Besides the exhibits of the various chemical apparatus and supply companies, there will be a large display shown by the United States Bureau of Mines and the United States Bureau of Standards.

The Fifth National Chemical Exposition promises to be a huge success and a large attendance of ceramists is expected.



Trade Opines Wage Conference Will Result in Amicable Adjustment

More individual data was spread on the tables at the joint wage conference between representatives of the United States Potters' Association and the National Brotherhood of Operative Potters at the commencement of the bi-ennial wage discussion at Atlantic City, September 3, than during any previous conference in the history of the trade. Both

manufacturers and employes were in a position to know the average wage of every branch of the trade. The manufacturers had available before the conference the payrolls of the employes, but on the side of the workers these representatives had the supposed record of what the employes received and the number of hours employed for at least four weeks before the date of the conference. Both sides deemed it wise to have this information in hand in view of the fact that the employes had asked the manufacturers for a twenty-five per cent. wage increase. Several weeks before the conference met, officials of the National Brotherhood of Operative Potters asked members of the different branches of the trade to name the number of hours actually worked during the previous few weeks and the amount they received as compensation. The amount of wages the workers received would, of course, have to agree with payroll records, but the record of the number of hours worked is not kept in the various offices of all departments.

It is the general opinion of the trade as a whole that the wage conference will result in an amicable adjustment, and that operations in all general ware plants will continue without interruption thruout the balance of the year. The payrolls of the manufacturers have been larger than ever before, and this must mean that the employes have been receiving more compensation, all of which is due solely to the activity in buying.

In some instances in the East Liverpool district, general ware pottery manufacturers have been known to receive sufficient business in the mails of one day to operate plants to capacity for one week. Business received during the other five days of a week has been of a character that shipments cannot be maintained on a par with new orders.

* * *

Demand For Dinnerware Continues High

General business with domestic pottery manufacturers continues very active, but the possible capacity of production has not been attained in some of the potteries. In a number of instances it is related that sufficient orders are in hand to insure steady operation of such plants thruout the balance of the year, even if no additional business was obtained in the meantime. In other cases, at least three months advance orders are on file. But all generalware and all pottery manufacturers are receiving new business daily. The manufacturers are most desirous of obtaining increased production, and in a few instances this is being secured, but the rule is not general. Not only is the demand for dinnerware continuing high, but the manufacturers of Yellow ware and Rockingham are also being favored with considerable business, which is quite sufficient to keep the plants in the East Liverpool and Zanesville district working full time.

There is also an increase noted in the demand for sanitary ware, this new business being created thru increased building activity thruout the country.

New patterns for dinnerware are now being delivered to the potteries for the 1920 lines, but these will not be presented to the trade before late in December. At the same time the new dinner shapes will also be available.

* * *

Infringement On Pottery Trade-Marks

Generalware pottery manufacturers who have either obtained a copyright or trade-mark for their merchandise have announced their intent to protect such interests against infringement. The instance of this kind has been from the offices of the Knowles, Taylor & Knowles Pottery Co., of East Liverpool, which has sounded a warning to

the trade against the use of their trade-mark which has been registered and reads "K. T. & K. S-V China." The point brought to issue is that found in the letters "S-V" meaning semi-vitreous. This firm in its statement to the trade says: "This mark is now registered, and hereafter any new shapes or decorations we may produce will be patented in this and foreign countries, so that we will not be annoyed as in the past by having our goods imitated."

The protection of the Government on some special dinnerware treatments has been followed in a small way by some pottery manufacturers in the last few years, and since then there has not been so much copying of treatments as was formerly noted. In the Knowles, Taylor & Knowles matter, the firm has had occasion to notify four pottery concerns of the infringement on their trade-mark.

* * *

Potters Prepare to Use Coal For Firing

Pottery manufacturers in the Ohio and West Virginia districts have received notice from the companies supplying them gas which reads as follows: "You are hereby notified that the Public Utilities Commission of Ohio has renewed for a period of one year its administrative order No. 34 which provides that in periods of gas shortage industrial consumers shall be cut off, and in the event of continued shortage, domestic consumers may be limited to a maximum supply of 35,000 cubic feet per month." As a result of the receipt of this notice, some pottery manufacturers in the Upper Ohio Valley are preparing to use coal for kiln firing in the event there is a shortage of gas. Additional coal storage space is being provided by the Thompson Pottery Co., at East Liverpool, with this end in view, while other manufacturers are also taking protective measures.

* * *

In connection with the current pressing demand for its products, the Thomas Maddock's Sons Co., Trenton, N. J., is exercising every effort to bring about increased shipments thru cooperation of employes. In a recent statement to workers at the plant the company says: "These are days when we must make every effort count. Skilled labor is scarce, materials are high in price and therefore waste and lost motion must be reduced to a minimum. This can be accomplished in several ways. First of all there must be cooperation between each department. The presser must use a little more care in making the ware; the green room must get the ware in the kiln as soon as it is dry; the biscuit wareroom must inspect, have the ware dipped and gotten into the glost kiln as quickly as possible; the glost ware-room must assemble the orders as soon as the ware is out of the kiln and the packing and shipping department must deliver the orders to the railroad for shipment without delay. Second, we must all exert a little more care in the doing of our individual tasks. Let the presser make the piece a little better, let the kilnmen place every possible kiln available, let the selectors make their examinations more carefully, and when everyone begins to do things a little better, improvements and results will appear."

* * *

Employes of the Monument Pottery Co., Trenton, N. J., manufacturers of fine sanitary wares, held their annual outing at the Inter-State Fair Grounds on August 23. A large gathering of workers and their families made the affair unusually successful, and an event long to be remembered. There were races, games, baseball and other athletic sports, and everyone entered heartily into the spirit of the event. A fine luncheon was served to those assembled. On the Saturday previous, August 16, workers at the plant of the

Thomas Maddock's Sons Co., held their annual outing at Springdale Park. A fine program of athletic sports was arranged, including a number of humorous events, as a fat man's race, a thin man's race, fat girl's race, and so on, with cash prizes given to the successful contestants. The entire affair went off exactly as planned by the Outing Committee, and was one of the most enjoyable gatherings of the kind ever held by the employees at the works.



The erection of a new seven kiln pottery at Scio, Ohio, by East Liverpool and Scio interests, will be the first general ware plant of that size to be built in the eastern territory for some years. The last new seven kiln plant to be erected was that of the Southern Potteries Co., at Erwin, Tenn., which is under the management of Edward J. Owen. In the matter of the new Scio plant, the housing problem was a vital factor in the selection of that place as a location for the pottery. Business interests of Carrollton, Ohio, wanted the plant, but it was pointed out at the time that both the unskilled labor and housing features connected with the industry kept the town "out of the running." Providing structural materials can be delivered promptly, it is proposed to place the Scio pottery in operation on or about January. The Bedford China Co., at Bedford, Ohio, which placed its plant in operation last January, is making hotel and dinnerware in china, and this is the only new plant to start operations during the last few years manufacturing that particular line.



Generalware pottery manufacturers are continuing to brighten their offerings to the buyers thru the development of new shapes for 1920 delivery. The Knowles, Taylor & Knowles Co., of East Liverpool, Ohio, will have a new plain shape which has been named the "Victor." The Edwin M. Knowles Co., of Newell, and Chester, W. Va., are now showing a new plain shape also, which has been named the "Hampton." Cartwright Bros. Co., of East Liverpool have a new plain shape also, which has been named "The Argonne." A number of other manufacturers both in and without the East Liverpool district have ordered new shapes, including the Crown Potteries Co., of Evansville, Ind. Two new shapes are to be presented by the Homer Laughlin China Co., one a plain and the other a fancy shape. At East Palestine, Ohio, the W. S. George Pottery Co., also contemplates issuing a new shape for next year's delivery.



Potteries at Trenton, N. J., continue active, and the anticipated "big business" is well on the way. The sanitary ware plants are feeling the effect of the revival of building activities, and good-sized orders are being received for high-grade specialties of all kinds. The general ware potteries are enjoying an exceptionally fine call for their production; the demand for both decorated and plain white ware is heavy, not only for domestic but for export service, and it is said that Canada and Cuba have come actively into the market for material of this character. There is also a brisk call for higher grades of decorated dinner ware, including dinner sets and regular stock patterns. The local porcelain plants are operating at good output, and there is no let-up in the call for electrical porcelain and other specialties. If things hold at this high point in the pottery line, plant expansions will be needed.



There has been no decline in the volume of business generalware pottery manufacturers are receiving, if anything, an increase is to be noted in some instances. This business is coming from all sections of the country, and even for

export purposes, there has been some demand for the Eastern Ohio product. It is known that one good sized order was placed with an Eastern Ohio manufacturer for export to Turkey and that this business was to be followed with additional specifications. No small amount of American dinnerware has found its way into Canada this year, and in some instances buying from that quarter has been on a larger scale than has been heretofore experienced.



Continued interest is being shown in the development of the tunnel kiln which is being used by manufacturers in the Sebring, Ohio, district. That one or more of these kilns will be erected in the East Liverpool district before many years is the opinion held by some manufacturers, and even workers. Any defects in the operation of this kiln are being speedily ironed out, so that within a very short time it will be working in perfect order and producing a high quality of ware. Records show that more ware can be fired in the improved tunnel kiln within a given number of hours than is possible to fire in the present style of kiln, and as a result the production of the plant is materially increased.



A decided improvement is noted in the demand for sanitary pottery, due solely to the increased building activity thruout the country. The Great Western Potteries Co., at Kokomo, Ind., has been in the market to employ at least twenty-five additional sanitary pressers and casters, while the sanitary potteries in the West Virginia district have also been in the market for additional help. The eastern sanitary potteries are also in more active receipt of new business now than has been the case for many months. Not only is the domestic demand for sanitary pottery increasing, but the demand for the export trade is also much better now than during the early part of the year.



The Bedford China Co., which is operating a new pottery at Bedford, Ohio, but which has been featuring the manufacturing of white ware is now showing a decorated product. The body is vitrified and the principal product is hotel ware. The equipment of this plant is the most modern that has been installed, and includes the use of a tunnel kiln. All departments of the hotel china end of the plant are in full operation, and now the company plans to give attention to the development of the china dinnerware unit. This latter department is expected to be in operation before the end of October.

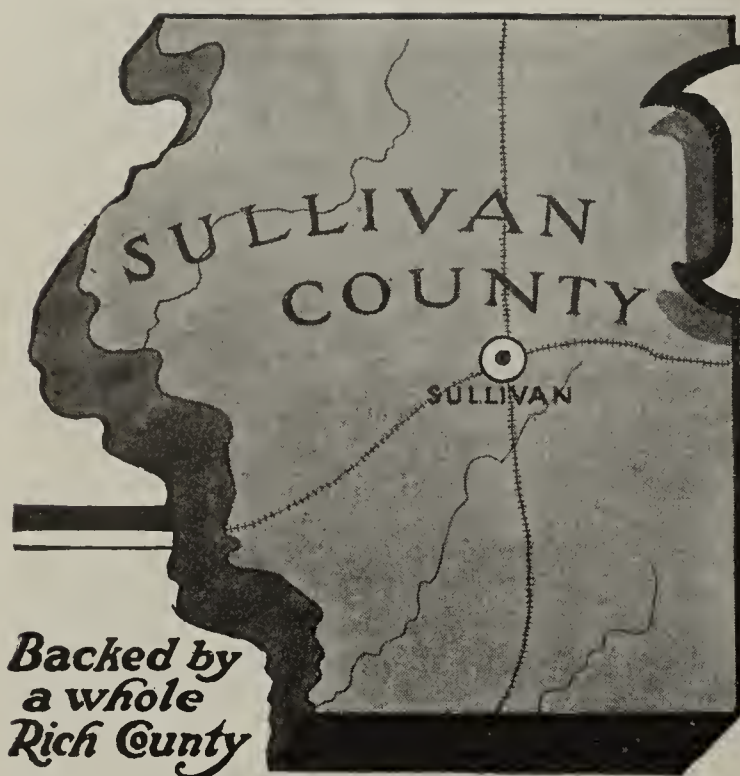


The Standards Committee of the American Ceramic Society has announced its desire to attempt a classification of pottery products, with the necessary standard definition for each kind of ware. It is claimed that there now exists much confusion in terms. The committee is of the opinion that the same ware may be at different times denoted as porcelain, china, whiteware or something else. The point has been made that in the United States the term "porcelain" has been extended to include many products which are not considered as porcelain in European practice.



A new line of art pottery has been presented by the S. A. Weller plant at Zanesville, Ohio, which has been named "Frutone." The line includes many shapes in vases, footed bowls, a six-inch handled nappy and a variety of other pieces. On a soft matt body in shades of terra cotta, old rose, burnt orange and darker reds blend into lighter tones.

(Concluded on Page 525)



MUTUAL

"America's"

An "All Star" Truck

Like an "All-Star" theatrical performance, the MUTUAL TRUCK is an aggregation of units that have won a place and a name for themselves at the very top of the profession.

In making our selection of the units for the MUTUAL we closed our ears to the noise of mere popular advertising; and, by careful comparison, measurement and test, of the rival makes of engines, clutches, transmissions, universals, frames, axles, radiators, steering gears, magnetos, carburetors, wheels and all other parts, chose the ones that the great majority of the best posted authorities on the "inside" agreed with us were the only ones that could be used for a truck that would dare call itself—"America's Greatest Truck."

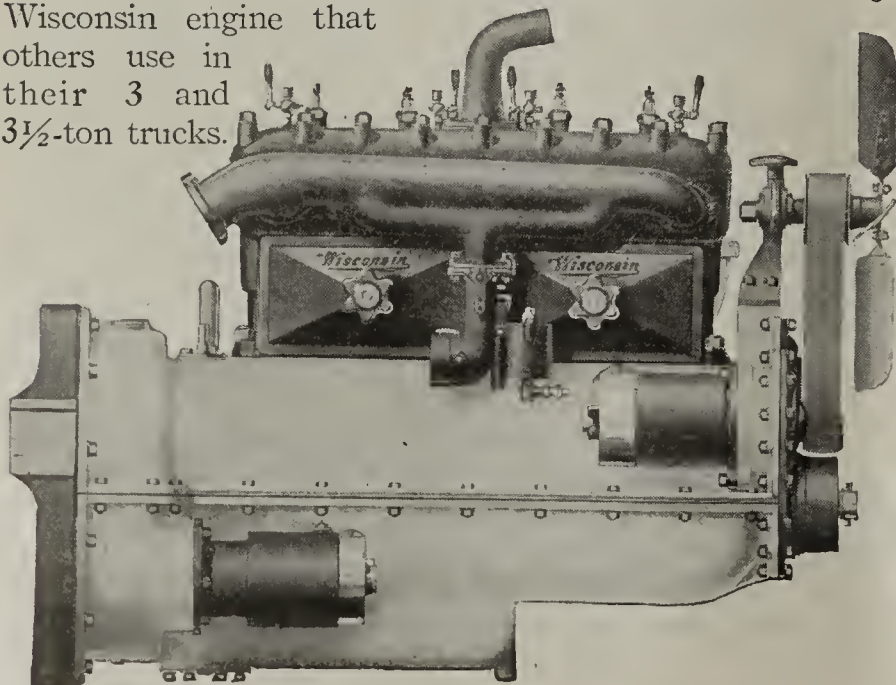
MUTUAL SUPER SPECIFICATIONS (TWO TON)

America's Greatest Truck Engine

From every standpoint—design, material, construction, extreme care in manufacture and inspection, the *Wisconsin Engine* is recognized as indisputably America's Greatest Truck Engine.

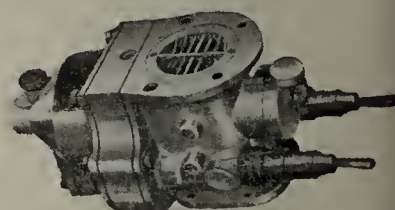
There are several very good "second best" truck engines on the market, any one of which is good enough for an ordinary truck; but there is only one engine that is good enough for "America's Greatest Truck"—and that engine is the "Wisconsin"—first in gas economy, endurance, reliability and all-round engine efficiency.

And we put into our 2-ton MUTUAL the same 4 x 6 Wisconsin engine that others use in their 3 and 3½-ton trucks.



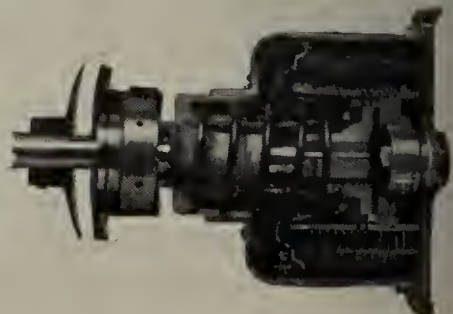
America's Greatest Truck Governor

The Duplex Company's Duplex (not Simplex) is the only one that controls road-speed independent of motor-speed. It makes the driver obey the owner's orders always and everywhere; it is, in fact, an "automatic chauffeur," that adds years of life to the machine by guarding it against abuse. It is vastly more accurate than throttle control; makes a 20% increase in gasoline efficiency by use of a patented "grid" valve instead of the butterfly type. It proportions fuel-feed to suit road conditions, delivers power as needed, and insures a quick get-away. The Duplex delivers more power on hills and bad roads; increases average road speed 20-30% and acts as an automatic safety brake on steep down grades. Incidentally it costs us 2 to 5 times as much as other makes and types.



America's Greatest Truck Clutch

The Hele-Shaw, Universal No. 5, oil-immersed, multiple-disc clutch costs us twice as much as the next best, and from three to four times as much as clutches used on the majority of trucks. It gives a smooth, silent but positive pick-up; a firm final grip; and saves the engine and entire mechanism (including tires) the ruinous "racking" that cheap clutches cause. You will tolerate no other clutch on any truck you own after you use the Hele-Shaw.



MUTUAL

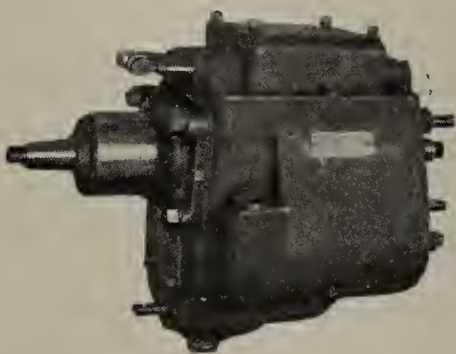
Greatest Truck" 2-3½-5 TON

America's Greatest Truck Universal

Could it be anything but a Spicer? And we use three Spicer joints in the shaft and a fourth in the universal clutch itself. Here, too, we put into our 2-ton Mutual a size used for 3 and 3½-ton trucks by all other makers who use the Spicer.

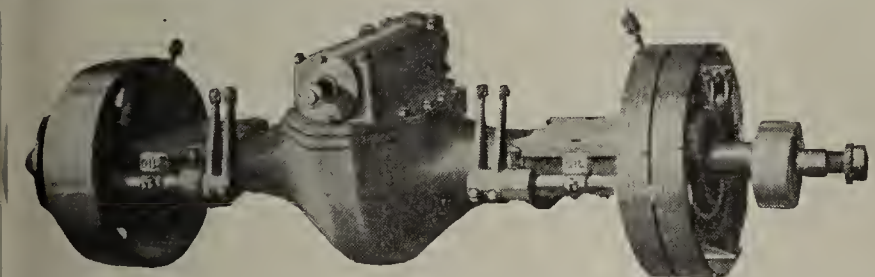
America's Greatest Truck Transmission

"Fuller" of course; and their model "G5" selective; with removable plates, to permit attachment of mechanical hoist and tire pump. Four speeds forward and reverse. A simple sturdy, dependable gear-set used by leading high-priced truck makers on their 3 and 3½-ton models.



America's Greatest Truck Axles (Ball Bearing)

To insure the highest efficiency, we adopted the Sheldon Worm Gear Axle—*first* because both the worm thrust and radial loads are taken by ball bearings, which offer less friction than any other type of bearing. *Second*—because it is of the semi-floating type, which has the advantages of greater simplicity, less weight, greater carrying capacity, greater resistance to side shocks, lower maintenance cost and greater ease of removing wheels for



inspection. The more deeply versed in scientific automotive engineering a man is, the more emphatic will be his declaration that the Sheldon is America's Greatest Truck Axle.

Sheldon. Ball bearing steering knuckle type of Front Axle was adopted as a matter of course.

And These, Too, Are Greatest:

Parish and Bingham pressed steel Frame; extra heavy type. Length 224 inches.

Mather Chrome Vanadium Springs.

Smith Metal Wheels for solid tires—regular equipment and not a costly extra.

Dayton Steel Wheels for pneumatic tires.

Goodyear or Firestone Tires; 36 x 4 solid for front wheels and 36 x 8 for rear; or same makes of Pneumatic tires as an option, at an extra cost.

Ross Steering Gear—with 20 inch wheel (not 17-18 inch).

Perfex Radiator, worth a big story in itself.

Bosch Magneto—type ZR4 with impulse-starter. Dust proof and water proof.

Stromberg Carburetor; type M.

Bound Brook Oilless Bushings: throughout.

Weather-tite Cab—fit for a King; regular equipment.

Powell Muffler—12 sections. Remarkably silent.

Electric Steel Castings at vital points, where others use Malleables.

25-Gallon Gasoline Tank

Special 2½-gallon Reserve Lubricating Oil Tank.
Wheel base—150 inch.

Specifications on the Mutual 3½-ton and 5-ton are equally "Great."

Buy One "Mutual"

Don't quibble about the price; but take our word for it—on this one purchase—that we give more for the money, in actual cost to us, than you can get in any other truck.

Put your "MUTUAL" into the hardest service you have, and keep a record of its ton-mile performance—all costs counted.

Do this, and all your future purchases will be MUTUALS.

We rise or fall on this test; and remember, we have vastly more at stake than you.

MUTUAL TRUCK COMPANY, SULLIVAN, INDIANA, U. S. A.

The SUPERINTENDENT

Helpful Hints for Practical Men Whose Problem is Maximum Production With Minimum Cost

Hand-Firing Soft Coal in Small Power Plants

The accompanying article which was abstracted by the "Black Diamond" from a bulletin issued by the United States Bureau of Mines and written by Henry Kreisinger, gives some valuable information on firing that appeals to the man without technical education who is employed in small plants of 1,000 to 2,000 horsepower.

When burning bituminous coal under power-plant boilers the best results are obtained if the fires are kept level and rather thin. The best thickness of the fires is four to ten inches. This depends upon the character of the coal and the strength of draft.

The coal should be fired in small quantities and at short intervals. The fuel-bed should be kept level and in good condition by spreading the fresh coal only over the thin places where the coal tends to burn away and leave the grate bare.

Leveling or disturbing the fuel bed in any way should be avoided as much as possible. It means more work for the fireman and is apt to cause the formation of troublesome clinker. Furthermore, while the fireman is leveling the fires a large excess of air enters the furnace. This excess of air impairs efficiency.

KEEP ASH PIT CLEAN

The ash-pit door should be kept open. A large accumulation of refuse in the ash pit should be avoided, as it may cause an uneven distribution of air under the grate. Whenever a coal shows a tendency to clinker, water should be kept in the ash pit. All regulation of draft should be done with the damper and not with the ash-pit doors.

In firing, the fireman should place the coal on the thin spots of the fuel bed. Thin and thick spots will occur even with the most careful firing, because the coal never burns at a uniform rate over the entire grate area. In places where the air flows freely thru the fuel bed the coal burns faster than in places where the flow of air is less.

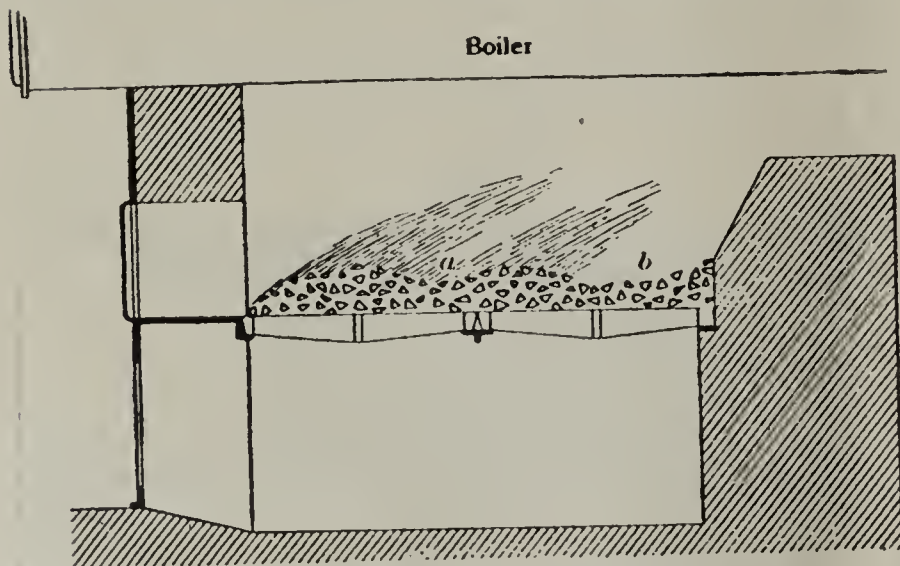


Fig. 1. Condition of a Well-Kept Fuel Bed Immediately Before Firing. (a) and (b) are Thin Spots to be Covered With Fresh Coal.

Before throwing the fresh coal into the furnace the fireman should take a quick look at the fuel bed and note the thin spots. In a well-kept fire these spots can be usually

recognized by the bright hot flame. The thick places have either a sluggish smoky flame or none at all. Figure 1 shows the condition of a well-kept fuel bed immediately before firing; (a) and (b) are the thin spots over which the fresh

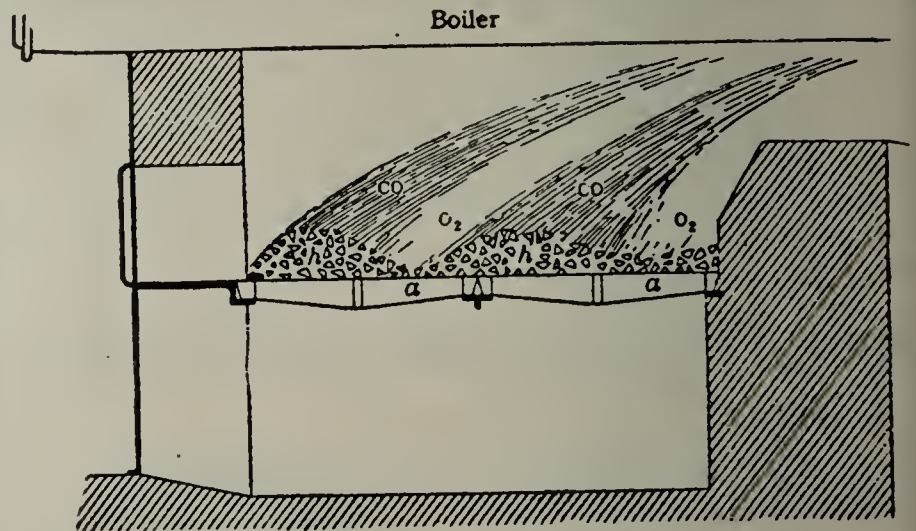


Fig. 2. Condition of Fuel-Bed After Several Firings When the Coal Is Spread Evenly Over the Grate Without Regard to Thick or Thin Spots. Smoke and Unburned Combustible Gases (CO) Are Shown Rising from the Heaps of Coal (h). Excess Air (O2) Passes Thru a Thin or Bare Spot (a).

coal should be spread. In order to place the coal over the thin places the fireman should take a rather small quantity of coal on his scoop, for it is much easier to place the coal where it is needed with small shovelfuls than with large ones.

The coal should be placed in the thin places in rather thin layers. If the fireman attempts to fill up the deep hollows in the fuel bed at one firing, the freshly fired coal may fuse into a hard crust. This chokes the flow of air and causes the fuel to burn slowly and start new high places.

HIGH PLACES ARE UNBURNED COAL

If the high places in the fuel bed are missed on one or two firings the hard crust at the surface gradually will burn thru or crack, thus allowing more air to flow thru and the place will get back to its normal condition. If the high place in the fuel bed is caused by a clinker the flow of air will not be free until the clinker is removed with a fire tool. Whatever may be the cause of the high places in the fuel bed the fireman must remember that there are places where the fuel does not burn. There is no use placing coal on such a place.

If the fireman persists in spreading the coal evenly over the entire grate area the coal will accumulate in large heaps in places where the flow of air is obstructed. After several firings the fuel bed will have the shape shown in Fig. 2. This illustration shows the heaps of coal (h) thru which little or no air flows. However, as the fresh coal at the tops of these heaps is heated the volatile combustible is distilled off and rises in columns of smoke and combustible gas, which may pass out of the furnace only partly burned unless the furnace is equipped with gas-mixing structures.

Among the heaps of coal are shown the thin spots (a) thru which the air passes freely, causing the coal in these

places and around the edges of the heaps (h) to burn with bright flame. When the fuel bed gets into this condition it is impossible to see the surfaces of the thin spots and difficult to place coal over them. There is great danger, then, that some of these thin spots may become holes, and admit a large excess of air.

The quickest way of making such fuel beds level is to break the caked coal forming the heaps and to spread it over the thin spots with a rake. This leveling has its disadvantages. It puts extra work on the fireman, lets an excess of air into the furnace thru the open firing door, and is apt to disturb the ashes and thus start troublesome clinkers.

A skillful fireman can keep a fuel bed level for hours without raking, simply by placing the coal where it is needed. He saves himself, not only the work of leveling the fires, but also avoids the formation of clinker, thereby reducing the hardest work to be done in the boiler room—cleaning fires.

* * *

Length of Journals of Shafts

There is a great difference in opinion among men, and as great a variation in practice concerning the length of journal-bearings for shafts. The diameter and speed of the shaft besides the kind of bearing metal and the amount of weight govern the length of the journals of shafts. The softer the bearing metal, the longer the journal should be in order to distribute the pressure over a greater area of metal. For example, white-metal bearings should be longer than bronze bearings.

The ordinary method of proportioning the length of journals is to make the length proportional to the diameter, and to make the ratio of length to diameter increase with the speed. The following table is a good one for ascertaining the lengths of journals according to the diameter of the shaft. D equals the diameter of the journals.

Kind of load.	Bronze and gun-metal.	Brass.	Anti-friction white-metal.	Cast iron.
Ordinary loads.....	Dx1.5	Dx2	Dx3	Dx4.5
Light loads	Dx1.25	Dx1.5	Dx2.5	Dx4.25
Very light loads....	Dx1	Dx1.25	Dx2	Dx4
Heavy loads	Dx1.75		Dx3.5	
Very heavy loads....	Dx2		Dx4	

For shafts of fans, blowers, and emery wheels, the length of the journals should be 5 1/5 to 7 times the diameter.

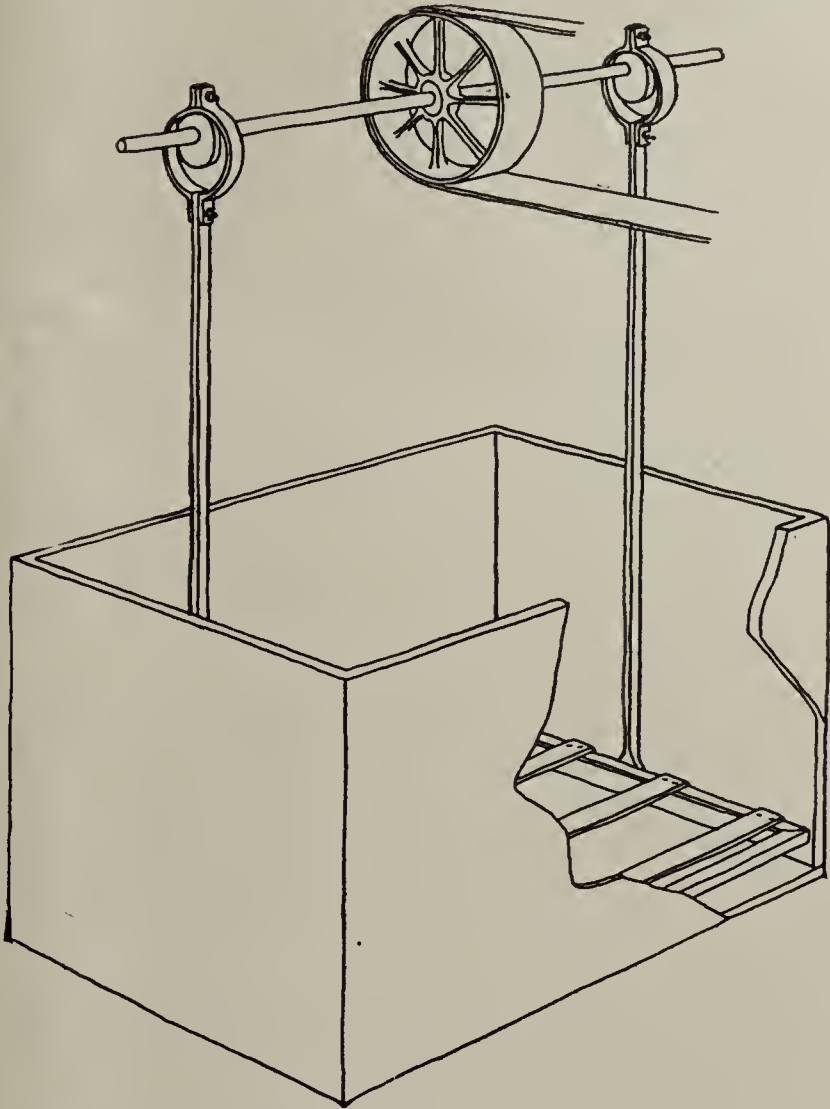
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Simple Machine For Washing Brick Molds

Where wooden molds are used in the manufacture of soft mud common brick, the brick after being formed are simply dumped out upon a pallet and the mold sanded and used over again. The sand, of course, is used for the purpose of preventing the clay from sticking to the mold and thereby causing imperfect brick to be made. The sand serves this capacity very well up to a certain point. Sooner or later, nearly every clay will begin to stick to the mold unless some means is taken to clean it thoroly. Sanding it does not help the mold from retaining the clay after a certain amount of usage.

The point at which the clay begins to stick to the mold despite the sanding, differs with various clays. Some clays give very little trouble in this respect while others require that the molds be washed and cleaned thoroly or otherwise sticking occurs and poor brick result. In some parts of Canada, it has been found thru long experience that when running full capacity the molds require cleaning about every twenty minutes.

When the clay begins to show signs of sticking to the mold the molder throws that particular form aside where it is picked up by a boy who takes care of the cleaning. In some parts of Canada, the washing is done in iron tubs.



Rough Sketch of Mold Washing Machine Used at Soft Mud Process Plant.

A rack suspended by means of two rods which connect with eccentrics is caused to move up and down in the water thus rinsing the molds. Several molds can be placed on the rack at one time and the outfit seems to perform its labor very satisfactorily. The tub measures about four by six by three feet.

* * *

Low Gear Ratio Advisable When Using Trailers

Long distance hauling between cities has developed into a thriving business in almost all sections of the country where roads are passable. In many places, where roads are good and grades not too stiff, truckmen are finding it possible to haul somewhat more than the ordinary capacity of their trucks and to use trailers to add to the profits of the trip. In cases of this kind a low gear ratio is considered advisable by truckmen, to enable the truck to start the heavy loads with ease and to handle the load on stiff grades.

A concrete example of this condition is found in trucking problems which were met by the Leonhardt Truck Co., of Los Angeles, Cal. This company uses a 3½ ton Federal truck and a four-wheel trailer in their regular operations from Venture to Los Angeles over the Sarta Susan Grade. This grade is three miles long and contains as high as a twelve per cent. grade.

This truck has been in constant operation for the past eight months over this route and has regularly been loaded with five tons, with the trailer carrying seven tons.

Make your town a better place to live in by improving the homes and shops you have, and build more of them.

IN *the* WAKE *of the* NEWS

Being a Brief Mention of a Host of Interesting Happenings in the Varied Fields of the Clayworking Industry

Personal

Charles Frank, of the Hocking Valley Brick Co., Columbus, Ohio, was called to Huntington, W. Va., on business early in September.

Anthony Huver, retired brick manufacturer, died at his home in Philadelphia, Pa., on August 17, of a complication of diseases. He was 83 years old.

H. M. Thompson, manager of the fire brick department of the Thomas Moulding Brick Co., of Chicago, was in Columbus recently calling on J. P. Turpen, manager of the Columbus office.

John N. Benson, vice-president of the Big Savage Fire Brick Co., Frostburg, Md., died on August 3. Mr. Benson, in his many years in the fire brick field, made many friends, who will learn with deep sorrow of his passing on.

W. H. Gifford, of the Wisconsin Lime & Cement Co., of Chicago, was a business visitor in Columbus recently, calling on the Hocking Valley Products Co., which concern he represents in Chicago.

W. D. Roy, formerly president of the Coral Ridge Clay Products Co., Louisville, Ky., and still a stockholder in that organization, has been in Washington for the past year, in connection with some business interests there.

Lewis Lawrence, in charge of the brick plant at Jackson (Mich.) prison for the past six years, has handed in his resignation and will leave for a much needed rest. He will be succeeded by A. J. Voght, of Detroit, an expert on brick manufacture.

J. R. Marker, secretary and commissioner of the Ohio Paving Brick Manufacturers' Association, who was formerly Ohio Highway Commissioner, left recently on his annual vacation in Ontario, Canada, where he is fishing and roughing it.

J. A. Smith, vice-president of the Evans Clay Co., of Uhrichsville, Ohio, manufacturer of sewer pipe, was a visitor in Columbus early in September. He has his headquarters in Washington, D. C., where he has charge of eastern and southern business for his concern.

R. L. Queisser, head of the R. L. Queisser Co., Cleveland, Ohio, with Mrs. Queisser, has left for a tour of the East. Mr. Queisser will combine business with pleasure by investigating the building situation in and about New York City, and likewise the brick production for that territory. While East the Queissers will go to Atlantic City.

W. A. Fay, head of the Cuyahoga Builders Supply Co., Cleveland, has returned from a vacation spent in the wilds of Canada. To date he has not produced any snapshots or other recognized vacation mementoes. He states he was "somewhere in Canada," and is not revealing the hiding place any more than he did when he started, on the ground that if he wants to vacate next year he will be quite as free from the cares of the brick distributor then as now.

Alabama

The new brick plant at Attalla which has been completed by H. M. Johnson, of Gadsden, Ala., will soon burn a kiln

of 200,000 brick. The plant will have a capacity of 20,000 brick a day. The company owns a 20 acre tract of clay which has been tested and found to be first-class. It is stated that the demand for brick in this district will keep the plant in operation for some time.

California

The Woodstone Marble & Tile Co., of Los Angeles, Cal., has been granted permission to change the firm name to the M. A. Berne Marble & Tile Co.

The manufacture of fire brick has been started at Porterville, Cal. The products of the plant include magnesite, silica, chrome and clay brick.

The plant of the Pacific Sewer Pipe Co., at Corona, Cal., was entirely destroyed by fire recently, the loss being estimated at \$175,000. Plans are under way for rebuilding.

It is estimated over four million brick will be burned this fall at the Pomona (Cal.) Brick Co.'s plant, of which William McMullen is manager. Increased building activity, he says, has stimulated the demand for brick very noticeably.

The Pacific Sanitary Manufacturing Co. has been forced to enlarge its plant in Richmond, Cal., to care for increasing business, this plant being operated on a more extensive scale now than ever before. The accumulation of ware which required increased warehouse space during the war lull in building, is now pretty well cleaned up and a new furnace has been installed so the force of enamellers can be increased. Export orders are an important consideration.

M. Platts, a San Francisco manufacturer, has been in Porterville, Cal., arranging for the shipment to his factories in Millbrae of 200 tons of feldspar, a fine quality of which has been located in the foothills east of Porterville. He will use the spar in the manufacture of a glazing for pottery. Mr. Platts states that quartz of a suitable grade for the manufacture of porcelain has also been found in paying quantities in that section.

The question of clay vs. cement sewer pipe is still demanding attention in Los Angeles, Cal. At the conclusion of a special conference with representatives of the two interests, the Public Works Committee of the City Council recommended the approval of the suggestion of the Board of Public Works that no more ordinances be adopted for the use of cement pipe until the manufacturers have supplied sufficient pipe for pending jobs and until all pending jobs have been completed. The question of revising the cement pipe specifications so as to eliminate some of the alleged drastic requirements was taken under advisement.

Shipments were hampered to a considerable extent in the last week of August by the tie-up of railroad service very largely in California. The situation was particularly acute in the southern part of the state, when the steam railroads operating out of Los Angeles became involved in the street and electric railway strike, which had been in progress in that section for some little time. Yard and switchmen went out in sympathy as far north as San Francisco, and freight shipments were practically at a stand-still for a few days. Meanwhile, the brick men, as well as other shippers, have

had shipments pile up to a certain extent in certain localities.

While there is still much building, and especially large construction work, still held in abeyance, contracts are being awarded from day to day in sufficient numbers to bring the total value of the work under way in San Francisco up to a high figure. For instance, during the last week of August permits were issued by the City Building Department for work to cost in the neighborhood of a million dollars. This, with other work started earlier in the month, will probably establish a new high record for August in building construction in San Francisco. Building activity continues to increase in the other cities around the bay also. It may be noted, however, that the work is practically all of a necessary character, and is practically free of the speculative element. It is gratifying to the brick people that a fair percentage of the recent permits issued hereabouts call for the use of brick. The yards are all working about to capacity, and orders are reported steadily on the increase.

As evidence of the use of brick on a large scale in the work now getting under way in this section, it may be mentioned that a contract was let recently for a three-story brick and mill construction factory to be built at the northwest corner of Bay and Stockton Streets by the Simmons Co. at a cost of \$100,000. A contract was also awarded for the erection of a three-story and basement brick office building on the north line of California Street, near Front, at a cost of \$60,000. Segregated bids are being taken for the construction of a brick seminary in Berkeley, Cal., which will cost \$75,000. The architects are ready for figures on a one-story brick and stucco auto sales building at Twenty-ninth Street and Broadway, Oakland, Cal., to cost \$11,000, the exterior of which will be tile and terra cotta. The same architect is taking bids on a one-story brick machine shop, adjoining the Key Route Inn, Oakland, which will cost \$16,000. New segregated bids are asked for a new \$130,000 high school for Merced, Cal., the specifications calling for tile roofing. Residence building, tho mostly mill construction in California, calls for brick in some instances, also, as shown by the working plans for a two-story and attic brick and stucco residence to be erected at Crocker Highlands in Piedmont at a cost of \$30,000. Terra cotta facing is to be used on the \$500,000 four-story addition to Hamburger's department store in Los Angeles, Cal. Outside of warehouses, apartment houses, office buildings, factories, etc., using a good deal of brick just now, may be mentioned garage buildings. From all along the coast come notices of new garages, most of which are of brick construction.

Colorado

The Boulder (Colo.) Pressed Brick Co.'s plant has been working full blast all thru the summer and its activities would be enlarged if labor was obtainable. So far this year the company has shipped two and a half million brick, which beats all records for any corresponding time in the history of the plant.

Connecticut

The brick situation in New England is acute, and with many contractors it will be a question in the fall as to whether they will be able to get brick at any price. The demand for brick is increasing with little indication of an increased supply. The price of Connecticut brick has advanced to \$16 and a further advance is anticipated soon, because practically all of the yards have oversold their product and find it almost impossible to obtain labor for manufacturing. Some New England builders have been stocking up in anticipation both of the scarcity and the increased

price and are consequently in a favorable condition for the demand which is coming upon them at an accelerated pace.

Delaware

S. D. Townsend, G. H. Reed, and M. A. Tonner, have incorporated the Lehigh Brick & Rock Products Co. at Wilmington, Del. The capital stock is stated to be \$200,000.

One of the prominent producers of brick in the Wilmington, Del., district says that the big brick demand locally at the present time is for projects outside of the city. This territory has taken on sort of a "building boom" and active work is under way on a number of small and large projects calling for brick, hollow tile and other burned clay specialties.

To show the progressive spirit in construction work now prevalent at Wilmington, Del., it is interesting to note that the city council has approved an appropriation of \$2,500,000 for river front improvements. The project will include a wharf, brick warehouses, machinery and equipment for handling freight, etc. The plans provide for a complete water terminal, and will go far to increase the facilities of the city in this direction.

In speaking of housing conditions at Wilmington, Del., John E. Healy, a prominent contractor of this city, says that he has received far more demands for modest homes than he could possibly supply. He points out that the current tendency on the part of people who formerly rented their houses is to build homes for themselves. One of the greatest needs of the present is homes within the purchasing power of people of moderate means.

Common brick is operating under fair call at Wilmington, Del., and face brick is coming along as a good second. Fine grade building brick is obtainable at \$20 per thousand, delivered on the job. Hollow tile is in good demand, as well as partition tile. Other burned clay specialties are in popular use and the local dealers are enjoying good business in these lines. There is evidence of a little shortage of stocks, due to congested transportation conditions and inability to secure freight cars at this time. Orders must be placed well in advance to secure delivery at anywhere near anticipated time. Fire brick is enjoying a good call, and prices on this material have declined a few dollars, the present quotation being \$64.

There is certainly no lag in construction operations at Wilmington, Del., and vicinity at the present time. Within a short time, the city has taken a firm grip on the situation, and a number of interesting building projects are now in actual progress or being developed. Both housing and industrial work are coming to the front, and bringing a good call for building materials of all kinds. The Standard Kid Mfg. Co., has filed plans for the erection of a six-story addition to its leather manufacturing plant at Third and Monroe Streets, to cost about \$115,000; the Soeakman Co., manufacturer of plumbing supplies and dealer in sanitary earthenware specialties, has taken out a permit to build an addition to its plant at Thirtieth and Spruce Streets, to cost about \$54,000; the Central Realty Co. will build eleven one-story brick stores at Eleventh and Orange Streets, to cost \$68,000. The Washington Heights Century Club will build a new one-story brick club house on Concord Avenue, to cost about \$20,000.

Georgia

The Rome (Ga.) Brick Co., which was organized about 30 years ago, has sold its plant to the Rome Brick & Tile Co., which will be controlled by new stockholders, altho some of the old stockholders of the Rome Brick Co. will be connected with the new concern. The company has fine clay

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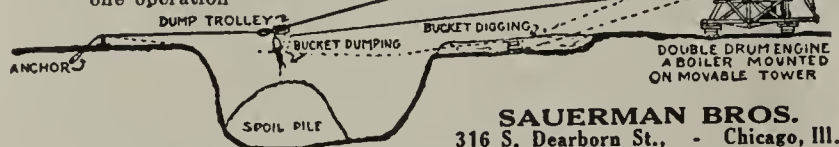
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Brick and Clay Record

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and shale beds and will turn out 65,000 brick per day. They report a splendid demand for brick in that territory, with good prices, ranging from \$17 to \$18 per thousand. The officers of the new company are: Thos. J. Treadaway, president; C. F. Treadaway, vice-president; George C. Bey-siegel, secretary and treasurer, and Wiley Trammell, general manager.

Illinois

The board of local improvements decided on August 18, after a long session, to pave Vermilion Street, Danville, Ill., with vitrified brick. Danville brick will be used on this project.

Indiana

The Cannelton (Ind.) Sewer Pipe Co. has assumed the exclusive sales agency of the Cannelton Clay Products Co. and is now prepared to offer superior service on all requirements of fire brick shapes and fire clay.

Iowa

The Standard Clay Products Co. is moving its planer, formerly used at the Harvey plant, to the Oskaloosa plant recently acquired. A large clay storage building is to be erected at the Oskaloosa plant.

The plant of the Tramp Brothers at Creston, Iowa, was partially destroyed by fire early in August. About half of the drying capacity was injured but the plant has continued to operate without interruption in spite of the damage.

The Negle Tile & Fuel Co., of Newton, Iowa, which was recently incorporated, is disposing of considerable of its stock to farmers living in the vicinity of Newton. The plant is at present working the surface clay and plans are under way for development of the shale deposits which are located near the plant.

The first contract for actual paved road construction since the recent Iowa legislature passed the paved roads bill was let recently for the building of a five-mile road between Cedar Falls and Waterloo. The road will be of brick with an asphalt filler. The contract price is \$39,388.80 per mile, which is slightly under the estimate given by the good roads enthusiasts in their campaign for hard surfaced roads.

C. B. Platt, secretary of the Permanent Buildings Society, Des Moines, Iowa, who has been spending considerable time lately visiting the various plants in the state, reports that there is a tendency on the part of many plants to use a horse planer for gathering clay. The equipment consists of plow, horse, scraper and a trap dump. The bank is operated on a slope and good results are being secured. The Morey Clay Products Co., of Ottumwa, is one of the plants which is using the "horse planer" and their regular planer is for sale.

Kentucky

At Danville, Ky., a \$100,000 bond issue will be voted in October for street improvements.

A permit was issued recently for the erection of a \$35,000 brick church by the Emanuel Baptist Church, at 644 South Tenth Street, Louisville, Ky.

Lexington, Ky., will vote on a \$1,350,000 bond issue in the fall election, \$300,000 being for school improvements; \$300,000 for street improvements, and \$750,000 to erect a municipal auditorium.

The Coral Ridge Clay Products Co., Louisville, Ky., is having considerable trouble in securing enough cars to take

care of its operations, the company reporting a good demand, but inability to take care of some rush inquiries.

Announcement has been made that the City of Louisville in figuring up her budget for next year is planning construction of a number of new streets, and resurfacing of old ones, as well as sewer extension and repairs. It is claimed that a quarter of a million dollars will be needed for sewers alone.

The Louisville (Ky.) Fire Brick Works is operating at capacity both of its plants at the present time, but reports that shipments are below normal, due to car shortage, and the fact that strikes in the East are preventing deliveries on some large orders.

Demand for fire brick is picking up out in the state as a result of increased refining operations. The Great Northern Refining Co. is starting a new plant at Lexington, where three other plants are promised; and the Bowling Green Pipe Line Co., plans a \$300,000 refinery at Bowling Green, Ky.

The brick men of Louisville turned out en masse for the annual outing and dinner at Hikes Point, near Jeffersonton on the evening of Labor Day. The outing this year was much dryer than the old outings. However, a \$2 dinner was served that would encourage even the most pessimistic in believing that a good dinner could still be had for two "bucks."

Building operations in Louisville during August were smaller than those of June and July, June having been the banner month. However, there is a fair volume of old work under way, and local houses are being kept busy making deliveries on the old business. New business is coming in a little slowly, and the outlook for late fall is not especially encouraging.


W. L. Cremers, manager of the sales department of the R. B. Tyler Co., in discussing the Louisville situation, said: "Business as a whole is fairly good, altho it has slumped off steadily since June. Our various departments are busy on old orders, and we are getting some new business, but high labor, uncertainty concerning prices, and generally unsettled conditions have held back things."

At a recent meeting of the building interests at the Louisville Board of Trade it was decided to indefinitely postpone the "Buy Your Own Home Movement" due to the fact that the movement was started too late in the season to bring results, and that the consumer wants a bid, and the builders don't care to take business at the present time except on a percentage basis.

Labor conditions in Louisville have been far from satisfactory during the past few weeks, and are causing some uneasiness. Labor is very unsettled, but the unrest has not invaded the brick industry to any great extent as yet. A number of strikes have been on during the past month, and for the past two weeks the street railway system has almost completely suspended, due to a strike of 1,300 men, but is now giving fair service over some lines.

The Progress Pressed Brick Co., Louisville, Ky., plans a number of improvements in its plant this fall after the close down, it having plans for a larger and better clay pulverizer, and for additional equipment on its old Lyon's press, which has been in operation for nearly thirty years. The company has recently installed a new Indiana truck, which has a body capacity of 2,000 brick, and which is arranged for either dumping common, or hand unloading face.

The P. Bannon Pipe Co., Louisville, Ky., is running its plants at full time and reports that it is busier with the brick and hollow tile lines than for some time past, while the demand for sewer pipe is excellent. A good deal of street improvement is being undertaken locally and at various points out in the state, and this is calling for a considerable volume of sewer pipe. The company has recently secured contracts



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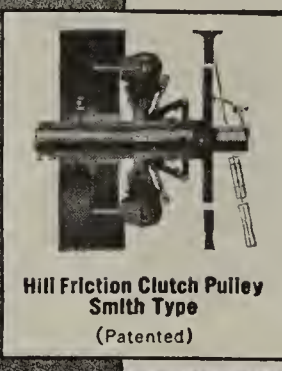
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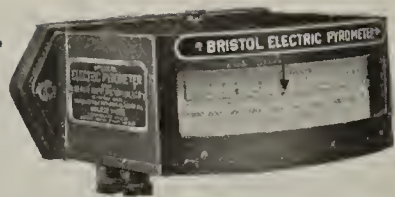
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A28

at Pineville, Ky., on a new court house, the common brick contract going to the Barbourville Brick Mfg. Co. The Bannon company has also secured a contract for material on the new Atherton building annex at Louisville.

The P. Bannon Pipe Co., and other local concerns will have exhibits of general lines at the Kentucky State Fair during the week of September 8. The Bannon company has shown for several years. It is expected that one or more tile silo manufacturers will have exhibits, as there is generally a complete line of silos shown at the fair. This year the fair is unusually promising, due to excellent rural conditions, increased purses and prizes, and the fact that larger and better exhibits have been promised. The Jefferson County Fair at Fern Creek did well, and the Bluegrass Fair at Lexington has a great outlook.

Director General of Railroads Hines, in a statement in Washington a few days ago alleged that coal prices were not caused by car shortage, but by action of the operators in using car shortage as an excuse for higher prices. He alleged that there was no greater shortage than usual. However, Kentucky mines are operating only two or three days a week, and cars are in the worst repair ever known. Prices are advancing steadily as mines are only able to operate part time, which result in reduced production and raised production costs. Steam grades have advanced about fifty cents a ton at mines, while domestic coal is up \$2 over the price in effect four months ago. A general coal shortage is now in prospect.

The Louisville (Ky.) Builders Supply Co., Arthur Livingston manager, has again entered the brick jobbing and re-tailing business with a vim. This company handled brick a few years ago, but for the past two or three years has only been handling common brick in a small way. Mr. Livingston, in discussing the brick game, said: "For a time it was not a profitable business with us, but conditions have changed, and there isn't the competition that formerly existed, as fewer houses are jobbing in Louisville. We have taken on some excellent lines of brick, including several well known lines made at Brazil and points in southern Indiana. We expect to push this line aggressively. We've also taken on some new lines of building supplies lately. Business as a whole has been very good with us, as our new lines have made up for slumps in some of the old ones."

Brick, tile and other clay products manufacturers of Louisville, Ky., and vicinity are generally complaining over the car shortage, which is reaching a serious stage. The larger operators report that they can not secure cars enough to take care of orders and that they are considerably behind on shipments. Concerns operating a few miles from the city, and depending on railroad shipments to bring their product on the local market are especially hard hit by the car shortage. A meeting of leading traffic men, including railroad men, the head of the transportation division of the Board of Trade, and shippers was held at the Board of Trade. At this meeting a movement was started to facilitate shipping, thru loading cars to capacity, unloading and loading promptly, and endeavoring to keep such good cars as are obtainable working at capacity. Thousands of cars are laid up awaiting repairs, repairing having fallen far behind during the shopmen's strike, and the period that shopmen were laid off by the United States Railroad Administration.

Maine

Purington Brothers Co. has about completed work on its first brick kiln of the season at its yard on the Belfast Road

at Augusta, Me., and it is expected that the kiln will be fired shortly. About 750,000 brick will be burned, the kiln being one of the biggest ever burned at this yard.

The brick making industry at Brewer, Me., long one of the chief businesses in that place, is experiencing unusual activity this year. The weather has been unusually good for brick making and at the plant of the Brooks Brick Co. fires have just been started under the third half million brick this season with the operating period only about half over. Manufacturers in Brewer figure production costs about the same as they were during the latter part of last year. The Brooks company is using two large Packard automobile trucks for shipping purposes, these taking the place of three double teams previously used. Most of the brick manufactured in Brewer is being shipped to the northern part of Maine. The Brooks company at present is filling a large order for brick for the Thirteenth Street school house at Bangor.

Maryland

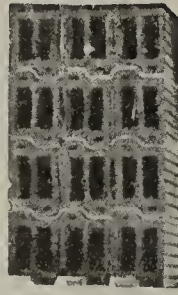
David B. Reckord, East Fayette Street, Baltimore, Md., dealer in face brick and other burned clay specialties, is associated with a yard at York, Pa., which is producing a fine grade of building brick, of dark shade. Operations are now being conducted at capacity, and the outlook is decidedly encouraging for a continuance of work at this status. Mr. Reckord is furnishing brick for a new postoffice building at Sunbury, Pa.

Owing to the rapidity with which inquiries are being received for factory sites by the Board of Trade, Baltimore, Md., the Industrial Bureau of that organization is compiling a comprehensive list of available property, including improved and unimproved sites. This data will be kept up-to-date, on file at the office, serving to facilitate the handling of requests of this nature. Real estate interests are cooperating with the bureau in the development of the data, in order that the information may be thoroly accurate.

To show the activity of the Baltimore, Md., district at the present time, it is interesting to note some of the more important structures to be erected. Architect Clyde N. Fritz, Munsey Building, is preparing plans for a new four-story apartment building, to be located at Garrison Street and Windsor Avenue, with cost estimated at \$700,000; a new four-story, thirty-apartment building will be erected at Walbrook, Baltimore, at a cost of \$45,000, of brick construction, L. Sterling Wagner, 4 East Rodwood Street, is architect; and William Fuld, toy manufacturer, is planning for the erection of a new three-story, brick plant at Harford Avenue and Federal Street, to cost about \$95,000.

The National Building Supply Co., Baltimore, Md., one of the most important concerns in this line in this vicinity, is making a specialty of a large line of fine clay products. These include sewer pipe and fittings of all kinds, as branches, reducers, etc.; traps, elbows, curves, etc.; fire clay stove pipe and fittings; fire clay flue linings; drain tile, etc., with terra cotta chimney coping, fire clay flue rings, and so on. The company does an extensive trade in these specialties, and reports trade as being fair at the present time, with every evidence that it will pick up as the fall season advances. It is pointed out that the stock of good building brick is none too plentiful in the city at the present time; the call for fire brick at the moment is light.

There is a good, active call for all kinds of building materials at Baltimore, Md., as might be expected under the present high trend of construction operations. Brick, face and common, is in strong demand, as are other burned clay



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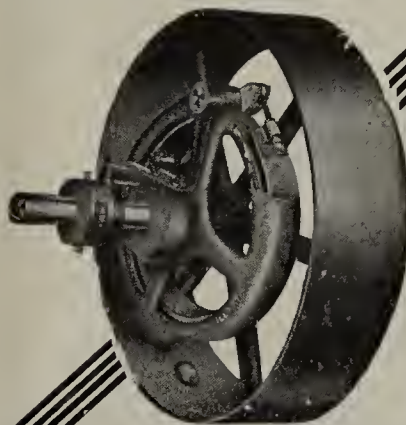
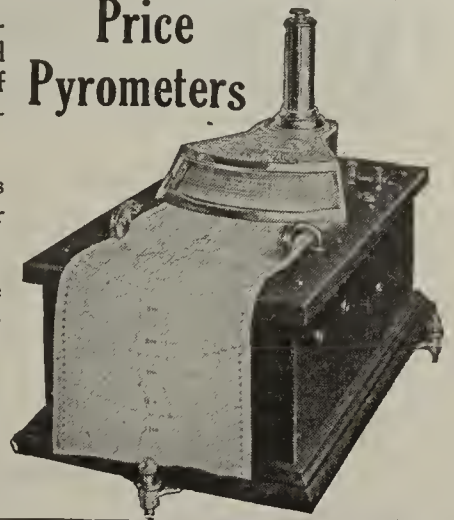
Many plants have improved their ware, saved time and saved lots of fuel with a Price Pyrometer.

Any one of these savings justify a Price Pyrometer on your kilns.

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The Price Electric Co.
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Price Pyrometers



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Service is a good old word often abused. But when applied to the Caldwell Friction Clutch, it carries all the force of its meaning.

Simple, strong, compact, efficient, the Caldwell Clutch transmits all the power you give it easily, dependably.

One Lever Controls It;
One Screw Adjusts It.
Absolutely Safe.

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Caldwell
FRICTION
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CARS—CASTINGS—DIES

In our Foundries and Machine Shops we are prepared to furnish Dryer Cars, Clay-workers' Castings, and Dies of all kinds for sewer pipe press and machines, etc.

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WM. E. DEE CO. 30 N. LaSalle St.
CHICAGO

We Can Save You Time, Money and Trouble on Fire Brick

BECAUSE OF

Quality, Price and Service

Freight Rates on all R.R.'s in UNITED STATES and CANADA

A Trial Shipment Will Convince You. Write Us

ALSEY BRICK & TILE COMPANY
ALSEY, ILL.



Easy, Cool Bearings

Nonpareil Anti-Friction Metal is particularly helpful on heavy bearings in brick and clay plants, on motors, cars, and on all bearings that are apt to develop friction and heat. More power. Less shrinkage and less oil. No more hot journals.

Nonpareil has been easing the load on bearings since 1885. Trial order solicited.

THEODORE HIERTZ METAL COMPANY
8011 Alaska Avenue ST. LOUIS, MO.



HERE'S A GOOD ONE

Recently our Buffalo representative sent us a report, which on second thought we believe will interest every clay manufacturer. Having called on an agent for sprocket chains made by a competing firm, our man reports that "he acknowledges, although a ——— agent, that for some of his work there is nothing to compare with UNION CHAIN under 'grilling conditions.'" All of which shows that even our competitors concede the superiority of UNION CHAIN.

If there are "grilling conditions" in your plant, we would welcome the opportunity to prove the many advantages of using UNION STEEL CHAINS.

THE UNION CHAIN & MFG. CO. Seville, Ohio

B-G PORTABLE CONVEYORS



helped the Superior Sand Co., of New Lexington, Ohio, to cut their handling costs from 10c to 1½c per ton of sand. B-G Conveyors perform equally as well for many others. Watch for our full page advertisements in each ALTERNATE ISSUE.

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Branch Sales Offices in Principal Cities

ALLIED Export Department
ALLIED CONSTRUCTION MACHINERY CORPORATION
120 Broadway New York, U.S.A.

products of all kinds. The price of good, hard common brick has advanced recently to \$17 per thousand, delivered on the job; salmon brick is selling at from \$3 to \$4 below that figure. Fire brick holds well at \$75, and there is a good prevailing call. Clay partition tile, 3x12x12, is now quoted at \$125 per thousand, an increase over former quotations, while the large size, or 4x12x12 is selling for \$140. Local dealers in mason building materials are optimistic as to the general outlook, and it is anticipated that the coming few months will show some record building work, and consequently, record calls for material.

Great activity continues in building circles at Baltimore, Md., and surrounding districts. There is no let-up or signs of let-up. The building movement is here with a vim and the fall season, now opening up, bids fair to establish new records in this phase of work, and in more ways than one. Monthly totals for new construction are hovering around the \$2,000,000 mark for housing work alone, and dwellings are going up in great number. Two and three-story brick homes are very popular in this section and the bulk of permits issued by the building department is for structures of this character. During the first seven months of the present year, no less than 1,864 permits have been issued for two-story brick dwellings, with cost aggregating \$4,252,052. Industrial work is also maintaining its important aspect in this district, and a large volume of work is under way or planned in the different industrial districts surrounding the city.

Massachusetts

The American Brick Co. which has a plant at Medfield, Mass., has elected George D. Dutton of Boston as president.

Five thousand dollars of the money soon to be paid to the city of Lowell, Mass., by the United States Housing Corporation for expense incurred in connection with the latter's housing development project, is to be used by the city for sewer extension work. An equal sum also has been appropriated by the city government. Sewers will be laid this fall in John Street, Burnside Street and Butnam Road and other extensions are to be decided upon.

Minnesota

Plans are under way for the opening of the plant of the Pengilly Brick Co., at Nashwauk, Minn., which has been closed down since last October on account of the shortage of labor. Charles Ravenscourt, treasurer of the concern, has been on the ground looking over the plant and getting the business end of the concern in readiness for the opening.

Missouri

Probably never before in the history of St. Louis has so much brick construction work been going on at one place as is now in progress in the new industrial tract in the neighborhood of Union Boulevard and Natural Bridge Avenue. The locality along the new belt line of the Terminal Railways Association has the appearance of a city being built in a week. There are between fifteen and twenty large industrial plants in the course of construction and many smaller factories have just been finished or are nearing completion; a number of other factories of the \$100,000 class are about to be erected in the belt. Two years ago, except for the large brickyard of the Hydraulic-Press Brick Co., this territory was used only for farm land. There are only a few industrial sites remaining in the tract.

Mayor Kiel has authorized Director of Public Safety McKelvey to draft an ordinance for the repeal of a recent

amendment to the zoning law which would permit the erection of buildings of a height of more than 150 feet in St. Louis. This was done following a conference between the mayor, city officials and the City Plan Commission, the latter of whom objected to the amendment which provided that the height of any new building in a block was to be limited only to the height of the tallest building already in that block. E. J. Russell, member of the commission, said that this would defeat the original intention to limit the height of all new buildings to 150 feet, with an additional 10 feet in height if the excess were approved by the building commissioner. Mayor Kiel and the other officials agreed that the original provision as to the height of buildings should be put back in the ordinance.

August has been a record breaking month for new building in St. Louis, and September is heralded as the period which will see more building supplies sold than ever before. Manufacturers of brick and other clay products are anticipating a tremendous output this month. If anywhere near the amount of new construction inaugurated last month develops during September dealers will be unable to fill orders in many instances. Few dealers are getting monopolies on big work in St. Louis, and brick contracts for several new industrial plants under construction, including the United Drug Co. and General Motors Co. plants, have been split three or four ways. St. Louis manufacturers have been favored in a way by the threatened shortage of freight cars. Where contractors might have placed a large number of orders for supplies outside of St. Louis, they hesitated fearing that the railroad situation might terminate in a tie-up of freight and delay their work. As a result, more than 95 per cent. of the supply orders and contracts have been secured by St. Louis manufacturers.

Brick and other clay products manufacturers whose products include plate glass and hollow tile report a continued increase in the sale of the former and an unusual demand, of late, for the latter supply. Almost a third of the building in the subdivisions surrounding St. Louis is being done with hollow tile, being used of course, for dwellings only. The glass output has been on the increase since the start of the present building season, and an unusual amount of alterations and remodeling has accentuated the demand. The unusual demand for hollow tile is attributed to the large number of builders who are prevented from using this material for construction inside the city limits. They are carrying out their plans in adjoining residential sections where the St. Louis building code does not apply. St. Louis is said to be the only large city in the United States that prohibits the use of hollow tile as the chief construction material. Manufacturers regard this as inconsistent on the part of the city administration in view of the fact that the same building code has permitted to be erected in St. Louis the highest all-concrete structure in the country. This is the eighteen-story Arcade Building at Eighth and Olive Streets which is almost ready for occupancy.

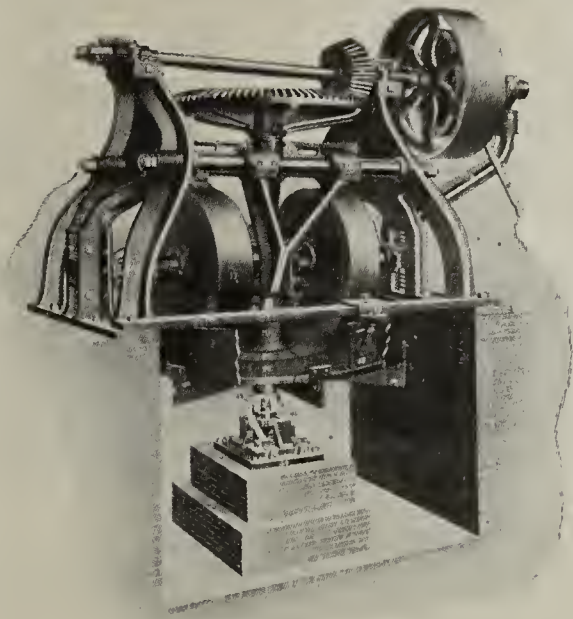
Nebraska

Fire, on August 14, destroyed the big drying sheds of the West Point (Neb.) brick plant. The loss amounted to \$3,000.

Fire, on August 20, caused considerable damage to the Seward (Neb.) Brick Works, completely destroying three kiln sheds and the boiler and machinery room of the plant.

New Hampshire

A large amount of sewer construction work is planned by the city of Manchester, N. H., in the near future. In



Machines for

Crushing, Grinding, Pulverizing, Empounding, Tempering and Mixing, Elevating and Conveying All Kinds of Materials.

STEAM PRESSES FOR MAKING

Sewer Pipe, Drain Tile, Hollow Blocks, etc.

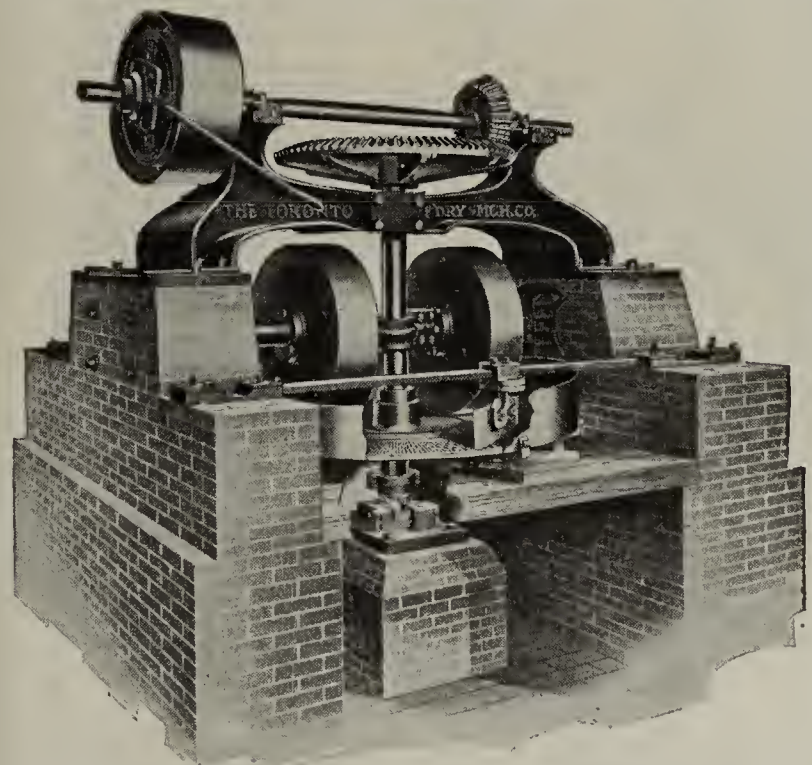
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THE MEANS GRINDING PANS



For Grinding Wet, Semi-Dry and Dry materials. Made in sizes adopted by the best judges. We are in position to solve your grinding problems.

SINGLE, DUPLEX OR BATTERY INSTALLATIONS OF
8, 9 AND 10 FOOT PANS.

Write for Descriptive matter and prices on Pans Also Bulletins on Sewer Pipe and Tile Presses, Elevating and Conveying Machinery, Trucks, Barrows and other equipment for the clay products manufacturer.

THE TORONTO FOUNDRY & MACHINE CO.

Toronto, Ohio

COST OF CLING-SURFACE

A few cents per belt

DOLLARS

THE SAVING OFTEN AMOUNTS TO MANY DOLLARS PER BELT

One user reports to us that the average cost of Cling-Surface on a belt that transmits 80 to 125 h.p. is **ONLY 23 CENTS PER YEAR!** Cling-Surface treatment on that belt was started in 1901, and the belt has given perfect service ever since.

Knowing that each per cent of slip in any belt means a loss of one per cent of the power, it is easy to figure what the approximate loss in dollars would have been if the above concern had **NOT** used Cling-Surface. If you wish us to give you the exact figures on this, we will gladly give them.

If you are having belt troubles, give us the pulley diameters, distance between centers, speeds of pulleys, belt thickness, belt width, etc., giving **ACCURATE** measurements in each case and we will gladly advise.



Cling-Surface Company

1029 Niagara Street

Buffalo

New York

U. S. A.

13

many sections of the city the present system is inadequate to meet the growing needs and it is conservatively estimated that it will cost one million dollars to install a system that will not only provide for present requirements but will also allow for growth of the city in certain directions. In order that a plan may be mapped out before the work is actually started the city government has provided an appropriation of \$15,000 for making a survey of the situation.

New Jersey

The National Fire Proofing Co. has resumed operations at its Perth Amboy plant for the production of hollow tile. The works have been closed down since June, 1916, and with a renewal of activities, it is planned to get back to a pre-war basis of output. Employees of all kinds are being engaged, former workers at the plant being given preference in the matter of engagement. It is said that large orders have been received for hollow tile specialties, insuring the operation of the local works for some time to come.

There is no let-up or slack in brick production at the Hackensack yards. The different plants in this district are, for the most part, operating at capacity, and expect to maintain this status of output for the remainder of the season. The rainy weather during the past few weeks has gone to retard production a little, but no time will be lost in making up for this enforced reduced manufacture. Brick is now selling for \$16 per thousand at the local plants, with considerable material finding its way to Paterson, Passaic and other points in this vicinity.

The car shortage is working a handicap in the matter of prompt deliveries of building materials in different parts of New Jersey, and in company with existing labor troubles is making for a rise of a number of points in different specialties. Among these, there are a few very popular burned clay products, including terra cotta, hollow tile, sewer pipe and face brick. Material of this character for the most part comes in from western points, and a large number of shipments are overdue. With deliveries so slow, it is necessary to place orders several weeks in advance.

Henry Maurer & Son, manufacturers of fire brick, with works at Maurer, near Perth Amboy, N. J., are now operating one continuous kiln and one rotary kiln at the plant, the latter with capacity of about 70,000 brick. The yard is operating under a "piece work" system, and to very good advantage at the present time. Business is reported as being a little below normal at the moment, but with every indication for a resumption to regular demand in the near future. The company views the outlook with favor. This plant is one of the most important in its line of manufacture in this vicinity, and enjoys a fine trade for its well known fire brick. The material turned out is of high quality, and this phase of production is always maintained.

Things continue to progress in a fine way with the ceramic plants in the Raritan River section. Tile works, sanitary porcelain ware plants, chemical earthenware plants, brick yards and clay miners are all busy, and good-sized orders are being received for material. The General Ceramics Co., the Perth Amboy Tile Works and the Fords Porcelain Works are among the active plants in this district at the present time. Labor is still difficult to obtain, and there is a great shortage in really good help; particularly is this true in the matter of common labor of all kinds. This condition is tending to retard output in many instances to the desired capacity. While there is no evidence of any great relief in the situation, it is hoped that as the weeks advance in the fall season that good labor will be more plentiful.



Unloading Hopper Bottom Cars with a Scoop Conveyor
No Track Hopper or Pit Is Necessary

THE SCOOP CONVEYOR

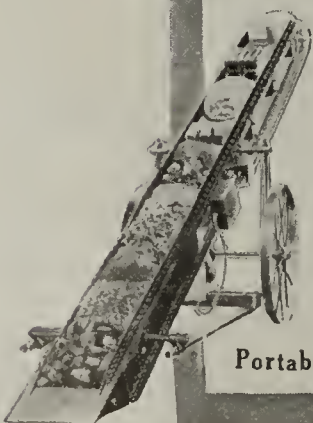
An original, distinctive and serviceable labor-saving machine for storing, reclaiming and transferring material, for loading and unloading cars, trucks and wagons.

Over 1000 Users

Our 1919 model, the result of experience, standardization and quantity production, embodies life-prolonging and service-giving improvements. Made in six different sizes. Prices from \$390.00 to \$770.00. Complete, with Electric Motor or Gasoline Engine.

Write for Catalog.

Portable Machinery Co., Inc., Passaic, N. J.

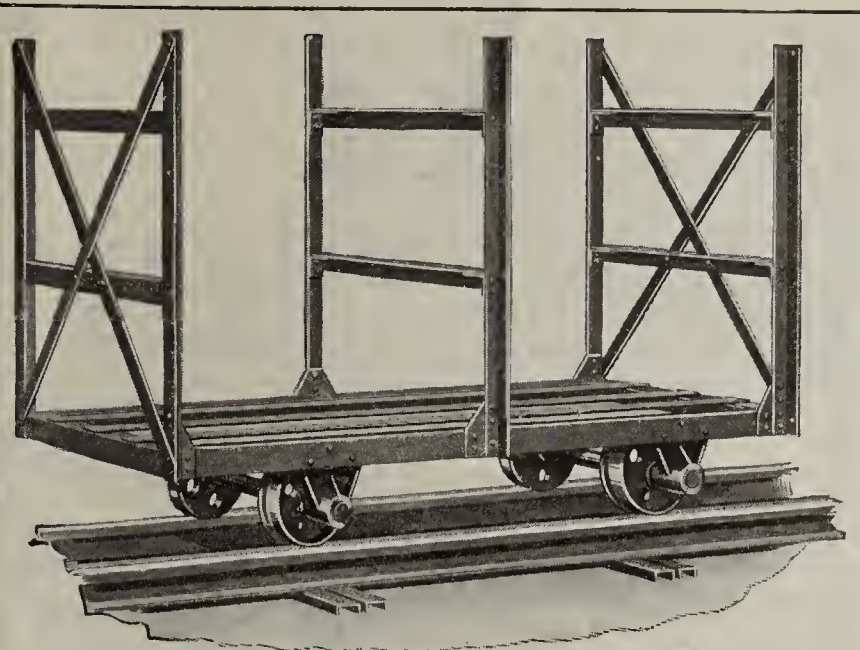


Manufacturers and building material men are coming into their own in a very encouraging fashion in northern New Jersey. Thruout the Newark district, including Montclair, Glen Ridge and the Oranges, construction work is going forward at a fine pace. During the past fortnight the projects which have developed at Newark include a new four-story plant for the Farmers' Feed Co., to be erected at Passaic Avenue and Chapel Street, with cost estimated at \$110,000; a seventeen-family, brick apartment to be constructed by the Jersey Building Co., 842 High Street, on Milford Avenue; and a new two-story, brick school building to be erected by the Board of Education in the Vailsburg district. A number of fine residences of face brick and terra cotta are being built in the dwelling districts of the city, while a number of equally attractive apartment houses, using like construction materials, are also being erected.

The Sneyd Enamel Brick Co., Trenton, N. J., is now producing both fire brick and enamel brick at its local plant. Business is reported as being very good at the present time, with a particularly strong call for high-grade fire brick. The production is only of this grade—the best, and consequently the company enjoys the better class of trade. The company is now operating seven kilns, and the plant is being thoroly modernized in all particulars. The enamel brick produced at the plant will ably withstand a test of red or black ink, and the material is of finest quality. Beyond production in these two major lines, the company is also devoting attention to considerable special work, including features of tile manufacture, and reports an increasing demand for this latter burned clay commodity. The company is furnishing forty-two of the forty-eight potteries at Trenton with their fire brick requirements. Fire brick is now selling at the yard at \$70 per thousand, and enamel brick at \$100 a thousand. Charles T. H. Phillips heads the company.

Good strides are being made in building work in the Trenton, N. J., district. A large number of the local industrial plants are arranging for expansion, and plans have been completed for a number of factory additions. The Ingersoll-Trenton Watch Co. will build an extension to its works to cost about \$25,000; the Thermoid Rubber Co. is arranging for the construction of an addition to cost about \$300,000; the John A. Roebling's Sons Co. has filed plans for the construction of an extension to cost \$20,000, and, in the ceramic field, the Thomas Maddock's Sons Co. has commenced the erection of a plant addition to cost about \$50,000. The large majority of these projects will require brick as the basic construction material; this is a very popular commodity in these parts, being readily obtainable from the local yards, and is a "strong seller" for structures of all kinds. Another interesting local enterprise to soon mature is a new brick club building for the Y. M. C. A., to cost about \$450,000; the structure will be located at State and Clinton Streets.

Common brick, face brick, hollow tile and other important burned clay products are operating under good demand in New Jersey. There is a strong call for the best grade specialties in this line, and prices are showing a tendency to advance. Common brick is now selling for \$20 a thousand at Newark, delivered on the job. With the good supply now reaching New York from the Hudson River points, a number of barges have come to Newark and neighboring sections, and stocks depleted a few weeks ago have now been replaced. At Paterson and vicinity, building brick is selling for \$19, while at New Brunswick, with bulk of supply from the Raritan River section, a price of \$21 and \$22 is quoted. In the southern part of the state, at Atlantic



Individual Service on Dryer Cars

Let us know your requirements—let one of our engineers come and help you to plan the style of car that will best suit your needs. We know how.

H. D. Conkey & Company
Mendota, Ill.

You can get a higher price for your brick if you guarantee it will be

Scum-Proof

And you can do this with perfect safety by using

R. H. Precipitated Carbonate of Barytes

It neutralizes the salt in your clay so that it cannot appear on the surface of the brick after it gets wet.

But don't accept a substitute—insist on R. H.—the dependable brand.

Write for circular and prices.

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New York

Chicago, Ill.
Cincinnati, O.
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St. Louis, Mo.
Kansas City, Mo.
San Francisco, Cal.

Philadelphia, Pa.
Boston, Mass.
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We carry a complete line of high grade chemicals for the clay industry



Light steel rails

We saved the day for the Clay and Coal Operators in War Times by furnishing BUCKEYE MINE RAILS, whenever and wherever needed, and while many other Steel Mills were running exclusively on other material, you could not have operated without us at that time.

Now, in Times of Peace, we ask that you do not forget us, as we can, and will render the same unexcelled service, and furnish the same high quality of material. "Buckeye means best", and BUCKEYE LIGHT STEEL RAILS are better still. All sections from 12 lb. to 40 lb. inclusive always in stock for quick shipment.

Let us have your inquiries, and we will take the chance of developing them into orders on our books.

THE BUCKEYE ROLLING MILL COMPANY
STEUBENVILLE, OHIO

DOES YOUR PROFIT GO UP IN SMOKE?

Canton Rocking and Dumping Grates in your plant mean a large saving in fuel, or a greatly increased production with the same amount of fuel.

By improving combustion, they make a coal saving of at least 10% in comparison with stationary grates. Peak loads can be maintained easily.

If you are interested in cutting down fuel cost and improving combustion, write for Bulletin B. Form 14.

Canton Grate Co.,
1706 Woodland Ave., N. W.
CANTON OHIO

**CANTON GRATES SAVE FUEL
FOR BOILERS FOR KILNS**

City and neighboring districts, the quotation is still \$18. Face brick continues to hold up well in the matter of call thruout New Jersey, with lighter shades in popular demand: prices range from \$40 to \$50 for high-grade varieties, while Harvards are selling in the neighborhood of \$35 to \$40. Fire brick is quoted at from \$60 to \$70 for good quality material, with a little slackened demand during the past fortnight. Hollow building tile, partition tile, drain pipe and other burned clay products are holding well at present price levels, and are in brisk call in different parts of the state.

Building work continues on the increase in New Jersey. There are no signs of any abatement in activities, and construction records not only show a good volume of permits, but work of a character involving larger and larger amounts. Particularly is this true in the matter of public enterprises, and a number of important structures of this nature are now being erected. Industrial operations, as well, are coming to the forefront rapidly, and plans for new factory buildings and additions to present plants are to be found in great variety. Housing work is holding its own in an able manner, and there is no let-up in construction operations covering apartments, houses and dwellings. There is a good call for brick and other burned clay specialties for buildings of various types, and both manufacturers and dealers are busy. As might be expected, Newark is in the lead of other cities of the state in the volume of building work, but other cities, such as Trenton, Camden, Paterson, Perth Amboy, and points in North and South Jersey show up fine, with every indication that the fall building season is going to be close to a record breaker. The labor situation among the building trades shows a little sign of improvement in the state, at least no important crisis has come about and the majority of men in this line are "sticking to their jobs." The outlook in this direction looms brighter, and the few controversies now current in certain sections seem likely to be arranged amicably at an early date.

New York

Walter Farrington, Inc., New York, has been incorporated with a capital of \$5,000 to manufacture and deal in ceramic tile. W. R. and A. Phillips, and Walter Farrington, 719 West 186th Street, head the company.

New York City's oldest building, a three-story and attic structure at 122 William Street, is being demolished to make way for a modern improvement. The building is composed of brick imported from Holland, and this Dutch brick, as good as the day it was laid, more than 150 years ago, will be used in the new building.

The Hay Walker Brick Co., New York, reports a slight decrease in demand for face brick during the past fortnight. The outlook, however, is decidedly encouraging, leading to an indication of a repetition of some of the fine orders recently placed for this company's high-grade material. The season, in all, has been a decidedly busy one, and the fall trade is expected to supplement the summer call with equally good volume. This company specializes in large work and has taken many important contracts, in and out of the city, for Harvard and other well known trade-marked brick in the months past.

The Rickert-Brown Realty Co. has begun the construction of 100 brick houses on Ditmars Avenue, Astoria, N. Y. They will be two stories and basement, the fronts being of tapestry brick and Indiana limestone, and will contain six rooms and bath. Each house will have a garage with fireproof walls and ceiling, connected with a concrete driveway in the rear. Altho the operation involves an investment, including the

value of the land, of nearly \$1,000,000, it is only an initial step, it is stated, as the company plans building approximately 1,200 houses in that section. It is expected the first of the houses will be ready for occupancy by October 1 and that the 100 houses will be completed in 100 working days.

With current rate of shipment from the Hudson River brick yards, there is little fear of any shortage of brick at New York and vicinity. During the past fortnight, the supply has reached about the highest point as found during the summer, but there is no difficulty in finding ready distribution. The cargoes received average from 20 to 30 per week. Brooklyn is taking a good quota, and New Jersey is also calling for a number of cargoes each week. The Hudson River yards are operating at good capacity, and making the most of the now waning season. There has not been much opportunity to lay in a reserve, and stocks in this respect are now far below normal.

With every desire of builders and prospective builders to go ahead with planned construction work in New York, the situation is becoming a little clouded by the prevailing labor situation. About 7,000 bricklayers are out on strike, with demand for a wage scale of \$10 a day, minimum; masons, painters and decorators are also out with similar demands for increased wages. All boroughs of the city are affected, and there is no evidence of any immediate settlement. At the same time, the situation has its bright spots, and plans are being developed for a number of important local structures. Housing work in Brooklyn is still a feature of building work in this district, and brick and other building materials are operating under a fine call. In Queens Borough, industrial enterprises hold the center of attraction, and there is considerable work of this nature now under way.

Among the important building projects in New York, calling for brick and other burned clay products, may be mentioned a new twelve-story, brick and terra cotta cooperative apartment house to cost about \$600,000. The building will be erected on East Ninety-seventh Street by the Estate of Lloyd S. Bryse; a thirty-six family, brick and limestone apartment building will be constructed on West Seventy-first Street, by the Two Twenty-five West Seventy-first Street Corporation at a cost of about \$400,000; still another brick apartment, 13 stories high, to cost about \$750,000, will be built by the Eight Eighty-four West End Avenue Corporation at such address on West End Avenue. A brick, limestone and terra cotta hotel to cost approximately \$500,000 will be constructed at Madison Avenue and Seventieth Street, by the Twenty-two East Seventieth Street Corporation.

Common and face brick, as well as other important burned clay products continue at the high point of demand at New York, Brooklyn and vicinity. There is no let up in call; in fact, it is just the other way, for larger quantities are being turned now that the commencement of the fall season is here. The price of common brick holds firm at \$15 per thousand, wholesale, alongside dock in New York, and the tendency is upwards; it is not believed, however, that this figure, which has been stationary for some months past, will fluctuate in any material way for months to come. The prevailing price of good hard common brick delivered on the job in New York, is now \$18.15 per thousand. Second-hand brick, per load of 1,500 is selling for \$15 delivered; there are no quotations on brick from the Raritan River section at the present time. Face brick is operating under a growing demand, with prices for choice varieties holding well at present levels. Kittanning selections are selling from \$40 to \$46 a thousand; Ironspots have advanced recently

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owned by Jackson - Bangor
Slate Co., Pen
Argyl, Pa.



"Very Economical"

"During the past year we have moved approximately 50,000 cu. yds. of slate shale with our ERIE Shovel. It is a wonderful machine, ideal for our work, as it is easily moved. We find it very economical and inexpensive. We are very much pleased with our investment." N. M. Male, Sec'y, JACKSON-BANGOR SLATE CO., Pen Argyl, Pa.



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The ERIE Shovel is easy to operate. Very speedy. Built with extra strength all the way through. Gives steady service in hard shale.

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Builders of ERIE Steam-Shovels and Locomotive Cranes, BALL Engines

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Proctor DRYERS for Clay Products

Our research department is equipped and available to investigate the drying of your clay products, and also to plan an equipment in which your drying may be performed satisfactorily, quickly and absolutely under control, in brief, satisfactorily.

You may obtain this service without incurring any expense or obligation.

Let us know your requirements.

Philadelphia Textile Machinery Co.
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You will not always get a genuine Jenkins Valve UNLESS

you look for and demand the Jenkins "Diamond Mark" on the body of all genuine Jenkins Valves.

The unvarying service of Jenkins Valves is the result of over 50 years of "know how"—that is, the Right value for each specific use.

Jenkins Valves are made of Brass, Iron or Steel in types and sizes to meet all requirements.

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2025-J

Rollin's Barium Carbonate

"We find that the use of Barium not only entirely eliminates the scum caused by sulphates, but deeper and richer colors result than would be expected." So writes a clay products company in Kentucky.

It is obvious to any clay products manufacturer that Barium Carbonate added to the pug mill or to the dry pan will produce brick and tile that command a higher price. It will build up more business than an inferior product which is "off color" and marred by white streaks.

Barium Carbonate makes the salt glaze stick to sewer pipe.

We can show you how the appearance of your ware can be improved, and can give you names of clay concerns who are profiting today by the use of Barium.

Write Us NOW

The Rollin Chemical Co.

(Inc.)

Charleston, W. Va.

from \$39.50 to \$42, while red smooth face brick has also increased from \$39 to \$40. Harvards are quoted at around \$35, while salt glazed varieties are selling for \$50. There are no raindrops in the market. Fire brick is in active demand, with prevailing price of about \$60 per thousand for good grade stock, delivered on the job. Hollow tile shows no change in quotations at the present time, altho indications seem to point to an advance in the near future. Prices range from \$63.75 per 1,000 ft., for 2x12x12, to \$153 for 6x12x12, delivered.

North Carolina

The Carolina Shale Brick Co. will build a modern ten kiln, electric drive, face brick plant at Norwood, N. C. Charles C. Davis, superintendent, would like to receive catalogs of machinery and equipment from manufacturers.

North Dakota

A company has been organized and incorporated to take over the brick plant of the Hillsboro (N. Dak.) Brick & Tile Co., and equip it with modern drain and building tile machinery. Recent tests have shown that the clay at Hillsboro will make a high grade of tile. Offices have been established in Fargo, at 519 Broadway, and it is planned to burn a kiln of tile this fall. Hollow brick and building tile will also be manufactured.

Ohio

A building permit has been issued during the past fortnight to M. A. Claypool calling for the erection of a \$20,000 brick terrace in Circle Street, Niles, Ohio.

Prices for both face and common brick in Ohio territory are holding firm at the levels which have prevailed for some time. Face brick are especially firm and with a shortage of stock there is no chance for lower quotations. Some talk has been heard recently of another advance but so far none has been announced. The common brick demand is also strong and prices are unchanged.

Quite a few brick roads are provided by the Ohio Highway Commission in the next road letting, September 12. There is a stretch of 1.44 miles of brick roadway to be built in Ashtabula County, a small job in Guernsey County, another small job in Montgomery County, jobs in Perry and Pickaway Counties, two jobs in Ross County aggregating 1.76 miles; a job in Scioto County two miles long, and a job in Summit County 16.707 miles in length.

During the week ending August 29, the Columbus building department issued 125 permits for new buildings valued at \$116,125. Of that number 12 were for dwellings. This is a slight lull in comparison with former weeks, but it is believed to be only temporary. Architects and contractors are busy with plans and specifications for new structures and indications point towards a rather busy fall building season.

Under the influence of car shortage, building operations in Columbus and Central Ohio territory are slacking up to an appreciable extent. Some of the building projects will not be carried out if the shortage of cars continues. Manufacturers of brick and other clay products still have plenty of orders on their books, but the car shortage is interfering with shipments to a large extent and consequently there is a general unsettled condition in the trade.

Papers have been filed with the Secretary of State, increasing the capital of the Franklin Brick & Tile Co., of Columbus, Ohio, from \$2,000 to \$1,500,000. The concern,

which was formerly the Columbus Contractors Supply Co., is going into the brick and tile business on a large scale. It has taken over the face brick plant at Taylor, a short distance east of Columbus. This plant will be enlarged to increase the output about 50 per cent. and the capacity will be about 125,000 brick daily. The improvement will consist in the erection of additional buildings, about three new kilns and much new equipment. The company will also soon start the erection of a large hollow tile plant at the same location. This plant will be in operation by the first of the year if present plans are carried out. The plans provide for a capacity of 40,000 to 50,000 hollow tile daily. F. M. Morrison is president and general manager; R. S. Dingleline, secretary-treasurer and sales manager; F. M. Sayre, vice-president; and M. E. Oheran, assistant secretary-treasurer. W. P. West, an experienced clay and brick man for several years with the Ironclay Brick Co., will devote his entire time to the sales department.

Example of how not to pave the main streets of big cities, in the opinion of leading paving experts of Cleveland, Ohio, is being demonstrated in that city at the present time. Euclid Avenue, the main thoroughfare of the city, and Superior Avenue, almost as important in the amount of heavy traffic it must carry, are being resurfaced with asphalt, the old paving blocks having been turned on their side and the cracks filled with tarred pebbles. The workmanship has been perfect, apparently. Fine, smooth surface is the result, and practically all main traffic has been using the new surface since it was completed. Observance by an inexperienced person already reveals the fact that a slight hole has appeared in the Euclid Avenue surfacing—and the job was completed but a week before. Commenting upon this work, Will P. Blair, vice-president of the National Paving Brick Manufacturers' Association, and one of the oldest and wisest authorities on perfect paving, says: "For durability, tenure of life and continued satisfactory service to vehicle owners, such an operation leaves much to be desired. For temporary use, giving satisfaction for the time being only—these thoroughfares are, at the moment, in the boulevard class. However, it takes no expert to see what the result will be. Any two year old resurfacing paving job, of which there are many in the city of Cleveland, and many of which are not subjected to the terrific hammering of traffic such as goes over these two avenues, tells the story of what these resurfacing jobs may be 18 months hence. It might not be far fetched to predict that they will produce all the joys (?) of a mud road. Asphalt upon cobble stones, in the minds of those who know paving as it should be today, neither for city or country traffic, is like filling the cavity."

Oklahoma

As the result of lightning striking the kiln at the plant of the El Reno (Okla.) Brick Co. on August 16, a fire was started which totally consumed the kiln, incurring damages of \$15,000. Two workmen in the plant escaped, one having a bar knocked out of his hands as he was firing the kiln. Two freight cars standing on the track near the kiln were also burned. The loss was partly covered by insurance and while the new kiln cannot be built for about ninety days, the company states that it will be able to use a number of old kilns to supply immediate demands.

Pennsylvania

The Plastic Fire Brick Co., Pottstown, Pa., has been formed with a capital of \$25,000 by E. H. Young and associates, to operate a local plant for the manufacture of high-grade fire brick.

Perforated Steel Screens

Of Every Description

For Screening Clay, Shale, Sand,
Gravel, Stone and Cement

No Other Screens Will Give You Equal Capacity.
Durability and Satisfaction

The Harrington & King Perforating Co.
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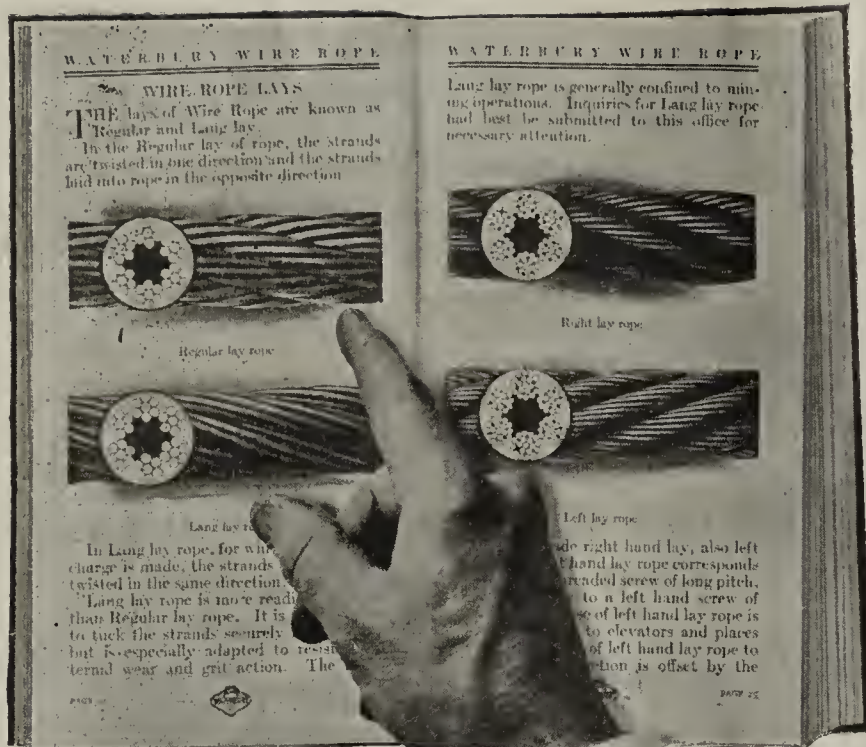
SELF LOADING ELECTRIC INDUSTRIAL TRUCKS

Electric Brick Barrow

Can you guarantee maximum capacity for your plant next season?
Are you providing modern equipment to attract desirable labor?
Electric Self-Loading trucks are proving an unqualified success lightening labor and reducing trucking expense handling brick, clay or fuel.
One man on an Elwell-Parker special Electric Brick Barrow performs with little effort six to ten times the work he did as a hand wheeler. He delivers a 4,000 pound load in half the time.

The Elwell-Parker Electric Co.
"Pioneer Builder of Electric Industrial Trucks"
Cleveland, Ohio





When a left lay is right

depends on what you want to do with the rope. If it is a Waterbury wire rope, every lay is "right," whether it is regular or Lang, right or left.* For Waterbury rope is laid of the best material by the most modern machinery and with all the skill that years of experience alone can give. It is the Waterbury quality of material and workmanship that have made Waterbury wire rope the criterion of quality in rope.

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*An illustrated description of different rope lays—and anything else you need to know about rope, is in the 220 pages of the Waterbury Rope Handbook. Ask for a free copy. 2342-W

Baird Pottery Machine

"a money maker, and successful in every way."

Many clay men are profiting by the manufacture of Flower Pots, either as an important department of their plant, or as a money making side line.

The Western Pottery Company, Denver, Colorado, does a large and profitable business making Flower Pots on the Baird Pottery Machine.



This company says that machine has proven very satisfactory. "It makes a nice looking pot and gives us a very much increased production. We consider it a money maker, and successful in every way."

With the latest model Baird Machine, manufacturers are moulding Stone Ware, Insulators, Runner Brick, Crucibles, etc. These products have a wide market. Profits are substantial.

Let us explain this proposition more fully to you. Send along a sample of your clay.

BAIRD MACHINE & MFG. CO.
265-69 Jefferson Ave., Detroit, Mich.

The Dunbar Coal & Clay Co., Dunbar, near Uniontown, Pa., has been organized to operate coal and clay properties in this vicinity. The company will mine clay in this district, and market in large quantities. Andrew J. Clark, Pittsburgh, is president; Joseph Meyers and L. M. Nemon, Dunbar, vice-presidents; John Sechler, Pittsburgh, secretary; and Charles Nemon, Dunbar, treasurer.

Hollow tile is looming up as one of the important burned clay products in the Philadelphia, Pa., section, and increased calls are being received for this material. Its utility is unquestioned and with prevailing costs of other products, it offers particular economy, considering the rapidity of erection and other features of construction. The Government has called for its use in connection with the erection of a new one-story building at the League Island Navy Yard to cost about \$284,000.

Things in the building line are coming along in an encouraging way at Reading, Wilkes-Barre and other points in eastern Pennsylvania. The brick plants in these districts are operating at good capacity, and there is a firm demand for material. Good grade common brick is selling for \$15.00 per thousand at these places, delivered on the job. In the case of the Reading district, this is a reduction of about one dollar in the quotation of a year ago, while at Wilkes-Barre the corresponding period of 1918 saw brick selling for about \$12.50 per thousand. Other burned clay products, such as fire brick, hollow tile, drain tile, flue lining, etc., are also in good call for construction work hereabouts at the present time.

Among some of the larger building operations now planned at Philadelphia may be mentioned a new thirty-one story office and bank building to be erected at the corner of Broad and Walnut Streets by the Fidelity Trust Co., at an estimated cost of \$8,000,000; brick and steel with tile and other burned clay products will be used. The Bernstein Manufacturing Co. has had plans prepared for a new two-story brick addition to its metal bed manufacturing plant on American Street, while Thomas Henry & Son, Trenton Avenue, are taking bids for the construction of a new two-story building. The Stanley Realty Co. will soon call for bids for its proposed new theater building, of brick, hollow tile and steel construction, to be located at Nineteenth and Market Streets, with cost estimated at about \$75,000.

The Upper Kittanning Brick Co., East Brady, Pa., is operating its plant at good capacity for the production of its well known face brick specialties. The company is making gray and buff, smooth and rough texture varieties, or practically the material which is now operating under a heavy demand thruout the eastern district. The product of the yard has been utilized in connection with the building of the new Ambassador Hotel at Atlantic City, N. J. The material is of particularly high-grade quality, reliable and running uniform thruout the different large shipments. The company is understood to be one of the largest, if not the largest independent producer of face brick of its specialized manufacture. This product is handled in the New York City district by the Hay Walker Brick Co. H. Otto Wittpenn is president and general manager of the Upper Kittanning company.

A good call obtains in the Philadelphia district for standard building commodities of all kinds, and particularly for common brick and other burned clay specialties; with noticeable increase in the demand as the weeks go by, the outlook is encouraging to local manufacturers and dealers. Good hard common brick is quoted at from \$19.00 to \$19.50 per thousand, delivered on the job, and

in this connection it is interesting to note that the price about a year ago was around \$14.00. A fairly good grade of brick, sort of salmon variety, is obtainable at slightly over \$17.00 per thousand. Partition tile is quoted at from \$90.00 per thousand upwards, according to size. A good market is developing for face brick and the call is becoming more and more pronounced. High grade material of this character from Pennsylvania yards is selling from \$40.00 to \$50.00 per thousand, according to grade and color.

R. L. Wilson, of the Eastvale Face Brick Co. and the Fallston Fire Clay Co., at Pittsburgh, Pa., has announced on behalf of his companies, that he will not be able to accept orders before October 1. Mr. Wilson has been refusing orders consistently since July 25. Volume of business which has cropped out all thru the East, in portions of the Middle West and West, with the exception of Chicago, and in districts as far removed as Atlanta on the south and Kansas in the west, is forcing Pittsburgh brick men almost without exception to turn down business that is begging for takers. Shortage of labor, trouble with coal and with cars are all hampering outputs, but companies that have escaped trouble from all these sources are still unable to accept proffered orders because of the volume of unfilled business on hand. In this circumstance, prices are remaining almost stationary, for most of the business was booked prior to August 1, and the increased schedule went into effect only at that time.

In discussing the building situation with regard to existing prices for materials, O. W. Ketcham, Philadelphia, a prominent manufacturer of terra cotta products, and president of the Master Builders' Exchange, holds that there is no just reason for the assertion that the high cost of materials is retarding construction work, as building operations have now developed to a point where it is quite impossible for many builders to secure sufficient labor. Again, the reports from prominent local contractors show that many of them are unable to comply with requests for estimates for proposed new buildings, owing to the fact that they are overwhelmed with work at the present time. It is also set forth that this same condition is now confronting many manufacturers, and that the manufacturer and the builder must measure their resources by the assistance they may be able to secure in the matter of labor and the supply of materials. Materials and labor insofar as construction and manufacturing go, seem to occupy about an equal footing, or, it is about fifty per cent. of one and fifty per cent. of the other. Accordingly, it is pointed out, the volume of business, construction, and supplies can and must be governed by the amount of available labor.

The past fortnight in Philadelphia building circles has developed greater evidence of a resumption of construction work on a good-sized scale. The city has been a little slow to take hold and local building interests have been anxiously awaiting a turn of affairs in the right direction. Industrial work is now coming to the front in company with a volume of new homes and housing accommodations. The local architects and engineers are busy, and Philadelphia contractors have secured a number of fine contracts for out-of-town work. With local work coming around in better fashion, the indications are that many of these contractors will find themselves more than busy in the weeks to come. Among the new brick factories to be constructed are a two-story plant for the L. H. Gilmer Co., manufacturer of belting, at Tacony, to be about 60 x 70 ft.; a one-story brick addition to the plant of the Keystone Wagon Works, at Second and



DISCARD YOUR LAMP TROUBLES

Eliminate lamp breakage and danger to workmen, danger to work in progress and fire hazard, by placing steel guards around the electric lamps in your plant.

FLEXCO-LOK Lamp Guards

cost less than a single lost or broken lamp. They are made of light, expanded steel, well coated with tin, and will withstand the roughest usage and abuse. They are easily adjusted and difficult to open except by using the key provided free with each dozen guards.

Flexco-Lok Guards are simple and efficient in construction—no wires to spring or bend. The halves swing outward from a hinge at the base.

Flexco Split Handle carries light to the most inaccessible places and will withstand the knocks of ordinary usage. They are quickly attached to the Flexco or Flexco-Lok Guards and require no wiring.

Write for catalogue and price list.



Flexible Steel Lacing Co.,

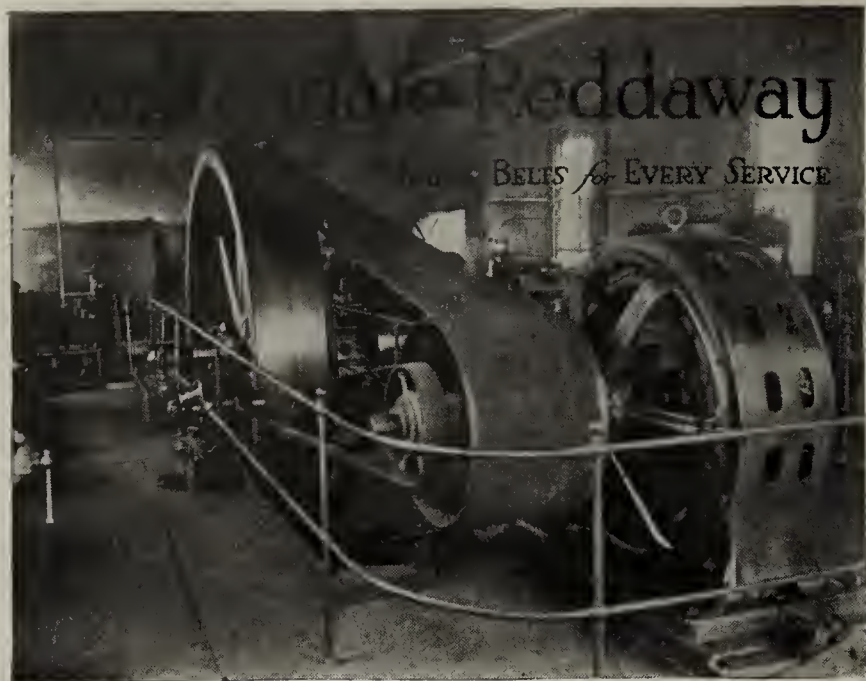
Manufacturers of

Alligator Steel Belt Lacing

Dept. L. G. 32

522 S. Clinton St.

Chicago, Ill



**260 H. P., from a 17-foot to a 37½-inch pulley, at 4400 F. P. M.
—there's a drive.**

And the 24-inch extra heavy "Camel Hair" belt, put on thirteen years ago, according to the engineer's report, "has been in steady service and shows no signs of wear."

This 86-foot belt, fastened with Crescent Jumbo Plates, was taken up **once**—in the first week—and hasn't been off since.

There's the advantage in genuine "Camel Hair" belting. It does more than you could fairly expect—and gives no trouble. Its great strength, remarkable elasticity and higher frictional grip than any other belting material makes it perform efficiently through years of hard service with no attention other than an occasional light dressing to keep its surface in condition.



The genuine "Camel Hair" belting has been made in the United States since 1890 solely by

The Rossendale-Reddaway Belting & Hose Company

Makers of fabric belts for every service

General Offices and Factory: Newark, New Jersey, U. S. A.

2007-R

Norris Streets, 75 x 100 ft., with wing, 60 x 74 ft. Two new bank buildings are to be erected, the first at 1429 Chestnut Street by the Republic Trust Co., and the other at Ridge and Columbia Avenues by the Northwestern Trust Co.

Construction work continues apace at Philadelphia and vicinity. Building operators and others are forgetting present high prices and making the best of the situation by inaugurating active construction work. Philadelphia contractors are busy, not only with local enterprises but out-of-town work. This city is sort of a heart of things and the entire eastern Pennsylvania district is active in local circles with purchases of building materials and awarding of contracts. Industrial operations are assuming a very important status and a fine number of permits have recently been issued for new factories or additions to present plants. Brick is a very popular material for construction work of this nature, and local yards are busy supplying the demand. The Powers, Weightman, Rosengarten Co., manufacturers of chemicals, will build four new additions to its plant to cost about \$45,000; the Philadelphia Paper Mfg. Co. will build a one-story addition on Nixon Street to cost approximately \$25,000; plans are being prepared by Architect M. H. Dickinson, 1785 Chestnut Street, for a new industrial plant to be composed of four brick buildings to cost about \$100,000; and the Sharples Specialty Co. will build a new factory and office at Twenty-third and Westmoreland Streets to cost \$65,000.

Tennessee

L. D. Parnell, at McKenzie, Tenn. is erecting a brick warehouse on Cedar St. near the L. & N. R. R.

The Chelsea Ave. Methodists in Memphis will erect a brick church at the corner of Gerard St.

Thompson Bros., wholesale cigar merchants at Memphis and Little Rock are erecting at Memphis, a two story fireproof warehouse on West Huling Street.

King-Haase Furniture Co. near Hollywood St., Memphis is to erect a new warehouse with 30,000 square feet floor capacity. The building will cost about \$20,000.

D. M. Crawford and Co. contractors of Memphis, Tenn. have been awarded the contract for a new residence for Mrs. W. G. Hardee, to be erected at Cleveland, Miss., to cost about \$30,000. The same will be of brick veneer. Hanker and Cairns, of Memphis, Tenn. are the architects.

The Greek Catholic Church of Memphis has acquired the old Jewish Temple, a brick building on Poplar Ave. between Second and Third and contemplate extensive improvements. There has been some controversy over the sale, the Hebrews in part not wishing to sell the property.

The Jas. Alexander Construction Co. of Memphis, Tenn. has been awarded the contract for two brick buildings, branches of the Bank of Grenada, Miss., to be erected at Charleston, Miss. and Moorehead, Miss. Each of the buildings are two stories high. Hanker and Cairns, of Memphis are the architects.

At Memphis, Tenn., a contract for the erection of a new brick building for the Bosworth Bag Co. has been awarded. It will cost about \$135,000, and will be used as a warehouse and for general offices. The building will be two stories high, 250 x 150 feet. A contract has also been let for an addition to the American Bag Co. building, 200 x 95 feet, to cost \$28,000. It will be built in South Memphis.

The resumption of building activity with the cessation of the large rainfall in May and June is starting a good activity

also with the dormant brick making industries in the Central South. All indications point to the latter half of 1919 being active. The clay mines in Tennessee and Kentucky are running at a good rate and the labor situation is very much improved.

Mann Wills, attorney and others are active at Brownsville, Tenn. in a public movement looking to the erection of a memorial hospital, in honor of the Haywood County soldiers in the world war. The contemplated site is the old Folk residence on West Main St. the boyhood home of Gov. Joe Folk, and all the distinguished Folk family. It is a very beautiful location on College Hill.

Work has started at Memphis on the Pantages Theatre being erected by a syndicate on S. Main St. near the corner of Monroe in the building formerly occupied by Van Vleet Mansfield Drug Co. The Holst Bldg. will be removed in part and a very modern structure will take its place. It was erected in 1891. Sando and Gilbertson, of Seattle, Wash. took out the permit. Efforts toward the erection of the other two large theatres at Memphis seem to be progressing well. Architects from New York have been there on that business.

Brick manufacturers and supply dealers at Memphis report good demand on brick and sewer pipe in August, with some stiffening up in the former. Ornamental terra cotta and other clay products are in fair request. Much of the construction work in residential lines is of the bungalow type with some ornamentation. A number of business structures are going up in Memphis, but many of these are remodeling jobs or the equivalent, altogether the building activity is considerable and greater than at any time during the last two years.

Plans were completed and accepted from Architect C. O. Pfiel, of Memphis, Tenn., recently for the new auditorium and market that will be erected by the municipality. Work may begin about September 15 and the structure will be completed by June, 1920, if present plans are adhered to. In the competition for architectural drawings Mr. Pfiel's plans were selected over several others. They are on display now at the Brooms Memorial Art Gallery, Memphis. Five architects entered the competition. Provision is being made for the site on North Main Street in the entire block bound by Poplar Avenue, Front and Exchange Streets, the site of the old court house. The auditorium will seat 12,500 persons. The cost will be about \$750,000. Bonds were voted by the city and county.

At Jackson, Tenn., the Roe Flats of fancy brick are being completed in the heart of the business section. The streets of the city are being resurfaced. The brick manufacturing plant north of town is active both in house brick and fancy brick. Local dealers report building for the summer good at Jackson. The Central Lumber Co. conducted by J. N. Fite and the City Lumber Co. conducted by W. C. Hickman and the Enochs Lumber Co. by S. B. Enochs are among the most active dealers in supplies, clay products as well as lumber included. The great event of the year at Jackson is the completion this month into the city from Middleton, Tenn. forty miles south, of the Gulf, Mobile and Northern Railroad, which is the fifth railroad for Jackson. This road will have its present northern terminus in that city and runs to Mobile, Ala. and the Gulf. There is talk of extensive improvements on one of the schools at Jackson and numerous business properties and ere long it is apt to be far more than a city of 20,000 population.

Texas

N. W. Dunham, head of the newly organized Dunham Brick Co., Breckenridge, Tex., has been in Joplin, Mo., where

PULSOMETER STEAM PUMP

Some government owned pumps are for sale; but they're NOT PULSOMETERS

WE'RE WRITING THIS AD. BECAUSE—simultaneously with the receipt of additional orders for PULSOMETERS from the U. S. government, the War Department offered for sale some steam pumps of other makes—pumps with pistons, rods and other parts that usually cause trouble or need attention—parts that aren't included in the make up of a PULSOMETER.

The Pulsometers, Uncle Sam enlists, stay in the service for GOOD—and more were recently recruited. They're performance proven pumps of dependability that get life jobs not only with Uncle Sam but others who adopt them. No attention, no oil, no sliding parts, nothing to wear out—a PULSOMETER is the strong, steady old stand-by, always ready for a pumping job any place, any time. Just turn steam into a PULSOMETER and it PUMPS. There's a way to speed up the job—the new PULSOMETER catalog tells you how.

Remember This Ad?



Uncle Sam won't part with even one of his PULSOMETERS

Contractor "Full'er-Pop" wanted to buy a Pulsometer.

He knew Uncle Sam had a regiment of them "on the job"—

And, since Kaiser Bill's scheme to beat the world had proved to be a "pipe dream" and our Doughboys are doing the "watch on the Rhine"—

He thought that some Pulsometers might be for sale at a bargain.

So he wrote to Washington, 'cause down there they get out a list, from time to time, of things they're "through with" and want to sell.

But do you think he could find a Pulsometer among the "undesirables" and "has-beens"?

No—and he'll die of old age waiting for one to show up "unwanted" by Uncle Sam or any other owner.

Owners keep their Pulsometers—get attached to them—Why not?

Never caused a user a gray hair—Nothing to worry about—needs no oil, care or attention. They just feed on steam—and PUMP!

From Berkley to Brest, from Topeka to Toul, the Pulsometer is getting the toughest pumping jobs done in a hurry, not only for Uncle Sam, but for contractors everywhere.

PULSOMETER STEAM PUMP COMPANY

Executive Offices, 221 West 42nd Street, New York, N. Y.

Boston—391 Atlantic Avenue. Hattiesburg, Miss.—Care of J. L. Welborn. Norfolk, Va.—409 East Water Street. San Francisco, Cal.—139 Townsend Street. Cincinnati, Ohio—Elm and Pearl Streets. Minneapolis, Minn.—400 Temple Court.

Agencies in all the principal cities

2007-M

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2021-M

"The S S S Special" Automatic Soft Mud Brick Machine



The "S S S Special" is the ONLY Automatic Soft Mud Brick Machine. It is Brick Machine, Bumper, Dumper, and Sander, all combined in one Great Machine.

**It Saves Labor and
Improves Your Product**

The "S S S Special" means
Improvement Advancement Progress

The Arnold-Creager Co.
New London, Ohio

he went to purchase additional machinery for the plant, which, when completed, will have an initial capacity of 20,000 brick a day.

Brick is found to be the only material for street paving that will stand the heavy truck traffic of the thriving oil towns of Texas. For this reason sixty-five blocks of streets at Ranger will be paved with that material. Already much progress has been made in paving the downtown blocks. Ranger has grown from a village of less than 1,000 people to a city of more than 25,000 population during the last twelve months. During the long period of rain this spring and summer the heavy trucks that were employed in hauling material and supplies to the oil field cut the streets up so badly that they were impassable at times.

Washington

At Vancouver, Wash., has been organized another manufacturing concern which commenced operation about the middle of July. The new firm, known as the Earths Products Co., is located at the corner of Fifth and Washington Streets and has been incorporated for \$100,000, the capital said to have come entirely from residents in Clarke County. If the present plans of the directors are carried thru, the plant will be enlarged within a short time and the company will extend operations over the entire United States. A variety of silica found in the hills north of Underwood in Skamania County is to be used to manufacture the products of the company. The board of directors of the concern consists of the following: W. S. Wood, E. N. Livermore, F. E. Cooley, Dr. R. D. Wiswall, all of Vancouver, and E. J. Martin of La Center and Hugh McMaster of Camas.

West Virginia

D. J. Pancake, with others from Ohio, has purchased twenty acres of shale on Sixteenth Street, Huntington, W. Va., and announces that they will begin at once to put in a big brick plant, to cost \$200,000.

The Universal Clay Products Co., Parkersburg, W. Va., has purchased the plant of the Asher Cooperage Co., Sandusky, Ohio, and will make improvements thereon at an early date. The purchase price has not been made public.

Twenty-eight million brick were used by the Government at the site of the great new powder plant it was building at Nitro, W. Va. A review of the building operations of the Pittsburgh district ordnance office, just issued, reveals this fact. Nitro was to have been one of the greatest powder plants in the world. It was only partially completed when the armistice stopped construction. It was being erected by the Thompson-Starrett Co., and almost 3,000 buildings were up when the war ended the work. It is located between Pittsburgh, Pa., and Charlestown, W. Va.

Canada

Lt.-Col. Harold L. Trotter, son of W. C. Trotter, president of the Standard Clay Products Co., Limited, St. John's, P. Q. and New Glasgow, N. S., has returned to Canada in command of the 11th battery. Col. H. L. Trotter graduated in 1903 from the Royal Military College, Kingston. When war was declared, he joined the engineers. He was employed on fortifications below Quebec and later installed the new machinery in the arsenal at Quebec. He was also engaged on the construction of the artillery testing depot in Quebec. From there he proceeded to Ottawa and with the rank of major, took command of an engineering company. In England he was transferred to the 4th division and placed

in command of the 11th field company which later became the 11th battalion. The battalion particularly distinguished itself at the Somme in September, 1916, and at Canal du Nord two years later. Col. Trotter was twice mentioned in dispatches and was awarded the D. S. C.



FINE CERAMIC MANUFACTURE

(Continued from Page 501)

which is suggestive to crushed fruit. This line of art pottery is the largest that has been presented by any of the art pottery manufacturers this year.

Plans are being made for a large addition to the plant of the Brunt Tile & Porcelain Co., located at Chaseland, just north of Columbus, Ohio. The addition will consist of an office building 35 by 60 feet, two stories high and an addition to the main building 70 by 110 feet and one story high. It is also planned to erect two additional kilns. Orders at the plant are large and it is now being operated to capacity. The work of construction will start in the near future.

Buyers from all parts of the country continue to visit the market seeking merchandise for immediate and future shipment. Warehouse stocks are not as heavy as formerly carried, and the bulk of new business is being worked up direct from current business on file. The fall season with pottery manufacturers is expected to be such that the productive capacity of all plants will be taxed to the limit.

The Speakman Co., Tatnall Street, Wilmington, Del., is active in its promotion of sanitary bathroom fixtures. The company handles the well known products of the Thomas Maddock's Sons Co., Trenton, N. J., with a fine line of stock. The company is urging the discarding of old-fashioned, unsanitary, built-in fixtures and the replacement with modern ceramic wares.

It is intimated in well informed circles that possibility exists that samples of German china will be offered for sale in the United States either late in the fall or early next year. It is known that importing houses now have their representatives abroad. The question of transportation is yet to be determined.

With a capital stock of \$2,000,000 the American Pottery Corporation has been formed under the laws of Delaware by E. H. Anderson, H. E. Nelson and C. E. Carlson. The detailed plans of this new company have not been announced, altho it is intimated that they will confine their operations to the eastern territory, with corporation office at 15 Exchange Place, Jersey City, N. J.

B. B. Root, L. B. Jones and Glenn Jones, all of Denver, Colo., obtained articles of incorporation on August 18 for the Western Pottery Co., which will conduct its business in Denver, following the recent purchase of the Western Potteries Manufacturing Co. The concern is capitalized at \$150,000, divided into 1,500 shares at \$100 par value each.

A new glost kiln is being built at the plant of the Steubenville (Ohio) Pottery Co. It is to take the place of an old kiln which was razed to make room for the improvement, and will be considerably larger than the old one. This improvement will tend to make a slight increase in the kiln capacity of the plant.

The Shaw Pottery Co., of Trenton, N. J., which recently filed a petition in bankruptcy shows the liabilities of the concern as \$41,037.17 and the assets at \$39,032.25. The value of the plant, and equipment, finished products and raw materials is listed at a valuation of \$30,000.

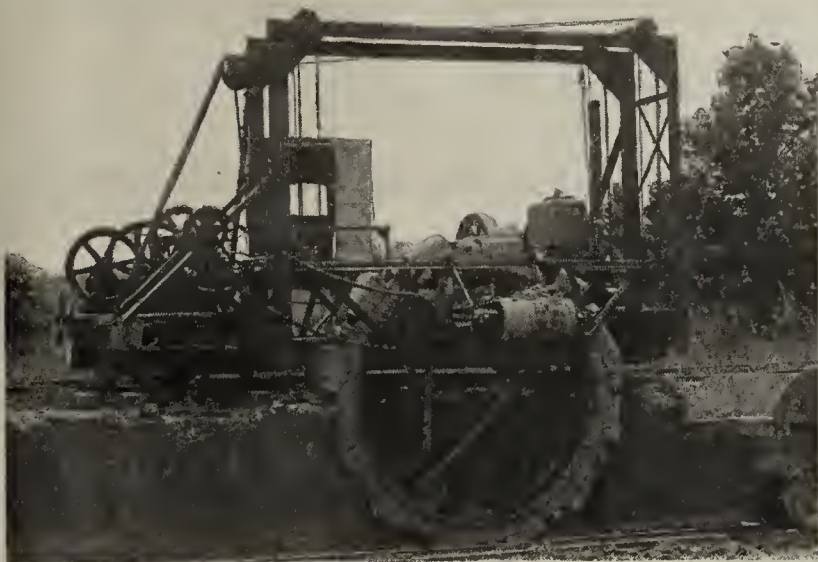


Figure the cost of UP-KEEP

Perfect mixture and saving in labor are not the only points to consider when you buy a clay digging machine—cost of upkeep is of equal importance. A digger that mixes clay and saves labor, but runs up expense for fuel, and repairs, is an expensive machine at any price.

"The up-keep of the Buckeye Traction Clay and Shale Digger is small," writes one of our customers. "The only thing wearing out to any extent being the spades of the cutters that shear the clay off, and the side cutters. Our blacksmith relays these with steel again. It takes only two sets of cutters to run the season." The cost for oil and grease is negligible.

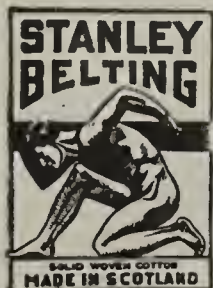
Write us about the conditions in your clay pit. We will be pleased to send you figures and data.

The Buckeye Traction Ditcher Co.
Findlay, Ohio

Buckeye

Traction Digger

The new Model C. M. is equipped with a combination conveyor which enables operator to change his discharge from pit to bank delivery, alternating as desired.



SOLID WOVEN

Stanley Belting

Is ideally adapted both for transmission and conveying purposes in brick and clay plants.

Its unusual flexibility gives it a greater arc of contact on your pulleys, enabling the belt to transmit more power at less tension.

On conveyor duty its great pliability, resistance to dampness, and special selvage edge make it an economical belt for the transmission of wet clay.

It is Solid Woven and the stretch is very slight, a cut at the end of the first or second day generally being the only adjustment necessary.

There are no layers glued or sewed together which might rip apart, as in other belts.

It is treated with a compound that minimizes the effects of oil, steam, water and acids.

Stanley Belting Corp.

34 Clinton Street, Chicago, Ill.

Reports have been received in the pottery district of the intent to establish a dinnerware pottery in Porto Alegre, Brazil, and that inquiries are now being made for American pottery machinery. The bulk of the dinnerware used in Brazil is imported, but very little is being sold to that country by American manufacturers.

The Maddock Pottery Co., Trenton, N. J., specializing in the production of chinaware for hotel service, has acquired two existing buildings on Third Street, to be used for plant extensions. The structures will be remodeled and improved for use as additional storage buildings.

The American Potteries Co., of East Liverpool, Ohio, has been chartered with a capital of \$10,000, to manufacture and sell pottery. The incorporators are J. Thomas Cannon, H. B. Fleming, T. P. Ferguson, Ben R. Bennett and George E. West.

The Dental Ceramic Corporation, New York, has been incorporated with a capital of \$50,000 to manufacture porcelain specialties for tooth restoration. The incorporators are: Frederick S. Welden, Louis R. Welzmler and Samuel Wasserman, 51 Chambers Street, New York.

* * *

"My Name Is Mud"

I am the unimproved highway.

My name is Mud.

The foot that pattered in primeval slime gave me birth.

Unchanged while the ages pass, I have endured. Time has not but served to increase my infinite variety. Earth-born and without a soul, yet have I lived. From the beginning have I been man's enemy.

A dust-colored phantom am I, stretching my length across hills, awaiting my time to crush endeavor.

I have snared caravans that I left bleaching bones in lands now desert.

Empires have fallen because of me.

I have turned victories into routs, I have trapped mighty leaders and have crushed enemies.

I am without faith; and those who trust me I deceive.

Today, I am fair to look upon; tomorrow a steaming bog.

I add difficulty to distance.

With isolation do I conspire to unjoint the endeavors of man. I tug at the wheels of the gristing cart, that bread may be dear. I hamper those that would feed the race.

I am the enemy of church and school. I mire the healer on his rounds, and delay the coming that little ones may die.

I am a disrupter of the home. I speed the first born to the cities when I am fair to see; and when he would return I face him with forbidden depths. I minister to bitterness and lay a tax on all the world. There is none who live who does not pay me tribute.

When man plowed with a crooked stick, I was there. When the ancients covered me with stones, I slipped away to other lands. I am the oldest line that lives today. Men count me cheap. I know the price they pay who count me so.

I am the unimproved highway.

My name is Mud.—From "The Lumber Cooperator."

* * *

"Prices are not coming down in America. The manufacturer who is halting upon the theory that the bottom is going to drop out of raw material will find the bottom drop out of his business before it does out of raw material."

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

How a County Got Behind a Truck Manufactory

Sullivan County, Indiana, that boasts of the biggest silo in the world, and of winning countless prizes for blooded live stock and superlative farm products, recently celebrated the opening of its greatest industry.

"Down by the railroad station" in Sullivan, the county seat, a new brick building stands, with a big sign announcing: **MUTUAL, America's Greatest Truck.**

And this building was recently the scene of a "christening" that has few parallels in American industry. The whole town closed its doors for the afternoon—every store in town—closed up tighter than on Sundays.

The local band, headed by a fat little drum major, struck up Hail Columbia, and the procession started in the "square" beside the picturesque old brick court house. Following it was the first Mutual Truck ever built, chauffeured by its purchaser, a flour miller from across the line in Illinois, who had been hauling grain and flour with it for 13 months thru all kinds of weather and over all kinds of country roads.

And, following the truck were some 300 automobiles, those conveying officers and directors of the company in the lead, followed by the "orators of the day."

The procession wound up at the truck factory, in which seats for 1,500 on the new cement floor, were quickly occupied. A speaker's platform at one end was crowded with officers and directors of the company—and the speakers.

A prominent attorney—they called him "Judge"—presided. The town poet read an epic entitled "Our New Enterprise"; a local banker told the story of the birth of the enterprise, and how Robert E. Petrie, its president and founder, had won the confidence of the whole citizenship of the county during two years of patient, earnest, business-like propaganda on behalf of his project; and how barriers had been battered down and pocket books finally opened up by this sincere, quiet young man, whose dream it was to make Sullivan County, Indiana, the home of "America's Greatest Truck."

Mr. Petrie, when introduced, was greeted with a salvo of applause, while friendliness shone from smiling faces.

He was no orator, but every ear drank in the story he told about the parts that were being put into the "Mutual" and how the Mutual Truck Company had a right to claim they were building "America's Greatest Truck" by reason of the fact that no other single truck in America contained more than a few of the super-specifications that formed the Mutual.

The editor of the local daily newspaper painted a picture of the advantage of industrializing the county, which aroused marked enthusiasm.

The advertising man from Chicago told of the early struggles of other truck companies that were now employing many thousand workmen, and predicted a similar growth and success for Sullivan's infant industry.

It was evident that the whole crowd considered the thing as *their* enterprise; and that nothing short of "America's Greatest Truck" would be good enough for Sullivan County. When a whole rich county, including its banks and bankers, gets back of an enterprise after two years of testing-out the sincerity and judgment of its promoter and makes the opening of the plant a community-holiday, a momentum is generated that should carry such an industry to marked success.

✻ ✻ ✻

The Latest International

International Clay Machinery Company of Dayton, Ohio, have recently brought out a distinctly original type of brick and tile machine known as their number 435. The original

BUCYRUS



Cut Your Loading Costs

You can cut your costs and increase your output—you can improve the quality of your brick by obtaining a more thorough mixture from the bottom to the top of the bank with a

Bucyrus 35-B Revolving Shovel

The rugged construction and surplus power of the 35-B permits it to work under the most severe conditions with a high steady output.

The 35-B carries a dipper of 1½ cubic yards rated capacity, which holds 1¾ yards when full.

Let our representative look over your property and advise what a BUCYRUS can save you.

Other Sizes of Revolving Shovels

14-B—¾ yd. (level full) ¾ yd. (full)	18-B—¾ yd. (level full) 1 yd. (full)
150-B—2½ yd. (level full) 2¾ yd. (full)	175-B—3½ yd. (level full) 4¼ yd. (full)
225-B—6 yd. (level full) 7 yd. (full)	

Also all sizes of standard railroad type shovels and dragline excavators.

BUCYRUS COMPANY

SOUTH MILWAUKEE, WIS.

New York New Orleans Minneapolis
Denver Portland, Ore. San Francisco



Insure Uninterrupted Transportation this Winter

Never within the history of the brick and clay industry has the dependability, adaptability and economy of motor truck transportation become a vital business necessity as today. The winter days ahead make it imperative for you to realize the importance of choosing the make of trucks that will haul and deliver your products, goods, materials and supplies every day this winter without interruption or delays.

To insure Uninterrupted Transportation 365 days in the year, the All-Year Cab for Kissel trucks was originated, perfected and patented. By adding the winter attachments—side, door and window attachments, the open cab, standard equipment on the four largest Kissel models, is quickly changed to an enclosed cab, warm, dry and comfortable—giving complete protection to drivers in the most severe winter weather—removing the necessity of layups on account of storms—increasing the efficiency of drivers and results for owners.

Kissel trucks, equipped with the powerful Kissel built engine, maintain schedules because they are built to overcome obstacles unsurmountable with trucks of less development. The nearest Kissel dealer will study your transportation requirements to insure your getting the right sized Kissel truck, thereby reducing your transportation expenses to the proper ratio of goods hauled and miles covered. Specifications, prices, etc., sent on request.

KISSEL MOTOR CAR CO., Hartford, Wis., U.S.A.

KISSEL TRUCKS

and distinctive features are due to the fact that the machine is made with only two castings, two shafts, and two gears. In commenting on this machine recently a brick manufacturer made the statement that this typifies the greatest single advance made in auger machine design for many years.

There is only one main casting to which is fitted an upper concave and burning cap, a design similar to that found in large electric generators. The form is made in one piece with a outboard bearing cast to the form. It is furnished regularly with cast steel pinion and semi-steel gear, although both gears can be furnished of steel with cut teeth. Both pinion and gear run in oil, the gear cast being dust proof.

Full details and illustrations bearing on this machine are given in International Bulletin No. 24, which will be sent by the company to any reader of *Brick and Clay Record*.

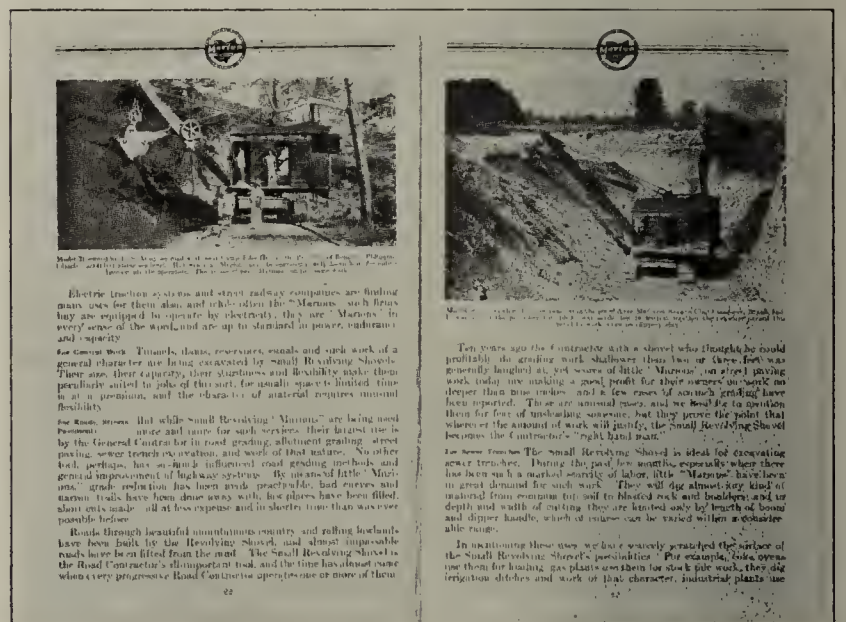
✻ ✻ ✻

Marion General Catalog

Catalog No. 188, issued by The Marion Steam Shovel Co., Marion, Ohio, is just off the press. It's a general catalog, illustrating and describing their complete line of excavating machinery, which includes steam shovels, dredges and kindred equipment.

The purpose of the book is to let the trade know the many different kinds of machines they manufacture, and in this way give them an opportunity to get a correct perspective of the extent and importance of the company's work.

A glance at the Table of Contents shows that space is devoted to Railroad Type Shovels, Small Revolving Shovels, Crawling Traction Trucks, Small Dragline Excavators, Orangepeels, Clamshells and Cranes, Large Dragline Excavators.



Two Pages from the New Marion Catalog

tors, Large Revolving Shovels, Dipper Dredges, Placer-Elevator Dredges, Hydraulic Dredges, Railroad Ditchers, Ballast Unloaders, and Log Loaders.

They will be glad to send a copy of this new catalog on request, or they have special catalogs and bulletins covering each of the important industries they serve.

✻ ✻ ✻

Whitcomb Gasoline Locomotive

Geo. D. Whitcomb Company of Rochelle, Ill., are the oldest builders of gasoline locomotives in the United States, and their equipment is used in practically every section of the country, as well as in many foreign lands. They have recently developed some new types, and are in position to furnish either gear, or friction drive gasoline locomotives, with capacity running from 2½ up to 25 tons. This company also manufactures a very popular type of electric storage battery locomotive with capacity from one to eight tons.

With such a long line of locomotives of different types, this company is in particularly favorable position to help the clay products manufacturers work out the most efficient method of transporting clay from the pit to the machine room. This company has issued attractive literature bearing on this subject, which they will be glad to send to interested parties.

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BRICK *and* CLAY RECORD

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

Production—More Production—And An Aroused Reader.

STRIKES are a sign of good times. This is academic. Workingmen do not usually "walk out" when jobs are scarce and when they are fortunate to have remunerative employment. Therefore, we can take this much consolation from the present situation, knowing that we are in a time of great prosperity—and other facts substantiate this conclusion.

But how long are strikes and talk of striking to continue and where will it end?

For some reason or other we believe that the end is in sight. The attitude of the authorities at Boston in connection with the policemen's strike, where union labor has over-reached itself, is significant. Again, Judge Gary's firm stand in not receiving or dealing with representatives of the American Federation of Labor in connection with the strike in the steel industry is, we believe, an indication of what is in the minds of America's business men. Added to this, is President Wilson's telegram to the commission of police of the District of Columbia, indicating that the President and Samuel Gompers have reached a parting of the ways.

The time has come when there must be a stop to this talk of strike. It is no more than fair that the majority of the population of America should take a stand whereby it will say to the small, tho organized, minority: "You shall not deprive us of food, transportation or other necessary conveniences while you fight out your selfish battle with a primitive weapon."

It is a strange case of irony that the present labor situation reveals. The workingman says that he must have more wages with which to meet the advancing high cost of living. He strikes to gain his point. Then he is idle. While he is idle he is not producing. An ebbing supply of any commodity, according to the law of supply and demand, automatically increases the price of that commodity. Therefore, the striking workman puts the high cost of living still higher.

What we need is for every man to stick to his job. He can accomplish far more in the way of reducing the high cost of living by increasing production than by striking. It is hoped that more level-headed members of organized labor will soon see this fact and will counsel conservatism rather than radicalism. What we need above all in the solution of present labor difficulties is production—more production—and then more production.

A Perfect Deluge of Legislation

NOT SINCE THE EARLY THIRTIES of the preceding century have we witnessed such a cornucopia of legislation designed to "promote" prosperity and regulate business as we witness at the present writing. The high cost of living is now having its inning in the halls of Congress where our chief solons are chalking up a high score in the way of new laws to reduce prices and cure this present evil.

It was recently pointed out by a very able business man that arbitrary price fixing during peace times has always resulted in the stopping or restriction of production and ended in conditions of great distress and scarcity of the necessities of life.

The same executive has pointed out that the greatest panic and disaster ever experienced in this country was that of 1837, following a period of great expansion and prosperity during which the federal government and members of the states attempted to legislate prosperity to every one. State and federal promotion and ownership of railroads, canals, banks and other enterprises, had been the order of the day. Some states projected as many as half a dozen railroads each. Speculation and struggle for favoritism ran riot, taking the place of honest construction and production in many parts of the country, ending in prices for the necessities of life much greater in proportion to wages than at the present. The word "profiteer" had not then been coined but the word "extortionist" was in everybody's mouth. Great mobs gathered in Philadelphia, New York, Boston and other cities. New York city warehouses were broken into by the mob, who distributed flour to all comers, immense quantities of it being destroyed and spread over the pavement of the streets, the sequel being immediate higher prices for flour resulting upon the dissipation of the necessary stocks stored by men who were, even in that day, called "hoarders."

Every radical dreamer and author of the wildest Utopian schemes seems to have been let loose on the country and is proposing laws without number designed to usher in industrial peace, a lower cost of living, social justice for all, and what not. Now, these are worthy ends to be sought after but they can never be obtained, as one man has said, "as a result of false teaching by men who never filled a pay envelope and who know little or nothing from a practical standpoint of economic questions"—who are, in short, star gazers.

The business man needs to be alert and on the lookout for this radical legislation. He needs thoroly to

arm himself against its passage. It has never paid to be asleep concerning developments affecting one's business, but now it is disastrous.



The Federal Trade Commission

SPEAKING OF LEGISLATION affecting business and prosperity, we are reminded of the pernicious activities of the Federal Trade Commission as at present constituted.

When President Wilson proposed the Federal Trade Commission and brought it into existence, American business men thought that now at last they had a friend at Washington. Ever since the enactment of the Sherman anti-trust law, business men, both large and small, have lived in constant fear and trembling of the Department of Justice, not because they were forming any so-called "combination" or "trust," but because of the way in which the law was being enforced and interpreted, affecting the conduct of even the most simple business. In other words, the Department of Justice said "Thou shalt not do this," and "Thou shalt not do that," but it never said "Come over here while we talk this matter over and see if we cannot find some way whereby you can conduct your business so as to avoid any possible violation of the law."

While the Commission was in its infancy and while it had as its members men like Edward N. Hurley, the Commission did good work and functioned in its proper sphere, but now what do we find. We learn that as recent as September 8, Victor Murdock, member of the Federal Trade Commission, in an effort to prevent price agreements, asked the house judiciary committee to give authority to the Commission over voluntary associations of business men. The purpose it is said is to reach such organizations as the American Steel and Iron Institute, the Institute of American Meat Packers, and the National Coal Association.

We thought that the Federal Trade Commission was intended to be the wise counsel in Washington for American business. It seems, however, that this body has taken to itself a uniform, star, and big stick and is performing to the best of its ability all of the duties of an officer of the law.



Brick's Opportunity

THE OTHER DAY we visited a retail lumber dealer's office. We had intended simply to pass the time of day and to be on our way but our good friend took hold of us like one he had not seen in years and proceeded to pour into our ear a tale of woe such as we have not heard in many a day.

The burden of this dealer's story was what he

termed "excessive high prices" now existing for lumber of all kinds. He showed us invoices and quotations which indicated beyond doubt an advance of ten to more than one hundred per cent. on all grades of lumber within the past year. This dealer told us that building in his town, for instance, has been greatly restricted due to these high prices and that business is not at all good with him. Without any interrogation on our part, he volunteered the information that brick prices were about the same as they were last year.

We have not been able to make up our mind as to whether or not this last mentioned remark is a sad commentary upon the brick manufacturers' cost system or not, but remembering that most brick plants are operating to as full a capacity as possible in an attempt to fill the demand for their product, there would seem to be some merit in the fact that brick prices have not gone scaring, and so without wishing to take any undue and unfair advantage of our friend, the lumberman, we believe that this is a good time for brick manufacturers to push energetically the promotion of brick homes. We know that the Common Brick Manufacturers' Association of America is planning to do this. In this connection it needs your undivided support.



An Aroused Reader

CONCERNING THIS MATTER of hair-brain legislation of which we have been speaking, a reader writes that there has just been introduced into the House of Representatives in Washington, a bill known as the Haugen bill to regulate commercial feed. The pernicious part of this bill is to the effect that the manufacturer must print on each bag of feed his formula which discloses the result of his extensive research, to the eyes of small and unscrupulous competitors who will benefit automatically without any effort on their part.

As this reader says, we are not interested in the manufacture of commercial feed, but a bill couched in such terms as this will establish a precedent which cannot fail at a later date to affect industries in which we are vitally interested.

This reminds us of the pernicious bill which calls for licensing of corporations and also one designed by some efficiency expert (?), calling for the marking of the cost of manufacture on every manufactured article. These bills are a menace to business. They may pass if you don't protest.

We hope to have opportunity to examine them more carefully and perhaps give our readers more information concerning them. In the meantime, do not forget that if the business man is to get any relief from this sort of thing he will have to be on the job.

FACE BRICK MEN DECIDE to RETURN to FRENCH LICK

*Manufacturers and Dealers to Convene at French
Lick on December 2, 3 and 4 for Annual Convention*

BACK TO FRENCH LICK, IND., is the decision made by the Board of Directors of the American Face Brick Association and the Board of Directors of the Face Brick Dealers' Association of America, who have chosen the above location for this year's annual meetings of the afore-mentioned associations.

Headquarters for these two organizations will be at the French Lick Springs Hotel, and the dates of the meeting fall on Tuesday, Wednesday and Thursday, December 2, 3 and 4.

It will be remembered that the face brick manufacturers and dealers held their conventions in 1916 and 1917 at the same point. The splendid facilities, painstaking attention and unusual courtesy of the hotel management, has again prompted them to meet at this well known hostelry. Other points were considered but the present congested conditions of metropolitan hotels led them to fear that the membership would not be favored with proper hotel accommodations. Furthermore, since the memberships have expanded so greatly and scattered to all sections of the country, it was felt that the choice of French Lick would be more convenient for every member of the associations.

Mr. Hollowell, secretary of the American Face Brick Association, says: "We are looking for a record-breaking attendance as our membership has practically doubled in 1919. Everyone is highly enthused with the possibilities in association work and it is easy to believe that there will be a very heavy attendance of manufacturers from every section of the country."

Altho it is a little too early to announce the program, it is known that it will follow along the usual lines of the past

few meetings, that is, it will be confined strictly to business.

A big feature of this year's conference will be an exhaustive discussion of the associations' publicity plans. The plan on how the mammoth promotional campaign for face brick will be carried on should be of immense interest to every face brick man. There are also a number of other important topics to be taken up but these will be announced later.

The dates of the meeting come at a very opportune time. December 1 is just at the end of the season at the hotel at French Lick, and if it runs true to form, the hotel will be practically empty of others except brick men at the time of the meeting. This will practically guarantee everybody the accommodations they desire.

Special rates have been made by "Senator" Taggart as follows: A special American plan arrangement has been made whereby the rates will be:

- \$ 7.00 a day for a single room without bath.
- 8.00 a day for a single room with bath.
- 13.00 a day for a double room without bath.
- 14.00 a day for a double room with bath.

This will mean a decided saving since good food and comfortable accommodations are assured.

Generally, during the first week in December at French Lick, very delightful weather prevails. To be able to spend three perfectly lovely "Indian summer days" among the beautiful and comfortable surroundings of French Lick during the coming important annual meetings of the American Face Brick Association, and the Face Brick Dealers' Association of America, will be a treat indeed, to all.



These Are Not "Liquid Veneer Cows." They Belong to the French Lick Springs Hotel Co., Who Take Great Pride In the Dairy Products Which Are Obtained From This Herd and Are Served to Their Guests.

Illinois-Indiana Division of A. F. B. A. Introduces New Feature in Chicago Meeting

Members of the Illinois-Indiana division of the American Face Brick Association met with a very good representation at the monthly meeting held at the Hotel La Salle, Chicago, on Tuesday morning, September 9. The meeting was characterized by its short, snappy and to-the-point discussions. Every manufacturer present entered into the various discussions and it is an inspiration indeed to witness the intense interest that is being taken in association work by these manufacturers.

One of the features of the meeting was the roll call of all manufacturers present who told of their situations in regard to the following questions: Fuel supply, labor, transportation and demand for product. Much useful information was gathered from the frank discussions of these questions.

After studying and discussing the stock reports which were issued to the members present, it was decided to add a new column to the report, under the head of "Brick in Kilns." This column will contain the figures of the total amount of brick in kilns regardless of their stage in manufacture. It was also decided to exchange statistics with other divisions of the American Face Brick Association that care to do so.

Secretary Hollowell introduced a new feature at this meeting in the nature of charts on manufacturing costs. Mr. Hollowell had obtained figures representing various statistics pertaining to the cost of manufacture and distribution from some dozen members of the division. Ernst & Ernst, certified public accountants, had prepared graphs showing the relative standing of those plants reporting. Much interest was displayed by the members in this new feature and it was decided that every manufacturer would send in his figures in the future and charts of the above nature should be made periodically.

Complaint was made that various railroads were requiring doors of box and stock cars, loaded with brick, to be boarded. Attention was called to the fact that some three years ago the American Face Brick Association had handled to a successful conclusion with the Master Car Builders' Association, the same question which resulted in the adoption by both associations, a system of loading which would obviate bracing at the doors. The secretary advised he would furnish all members with copy of blueprint showing proper method of loading cars with brick.



American Sewer Pipe Co. Changes Name

The American Sewer Pipe Co., Akron, Ohio, announces that as it is now manufacturing a varied line of vitrified clay products, it has been deemed advisable to adopt the more descriptive corporate name, American Vitrified Products Co. The executive personnel and location of general and branch offices will remain unchanged.



A. F. B. A. Takes on an Assistant Secretary

Announcement is made of the appointment of Edwin G. Hitt, as assistant secretary of the American Face Brick Association. The national association of the face brick manufacturers has expanded in a very short while into one of the most far-reaching and efficient organizations within the burned clay industry. The work at association headquarters has at least tripled. Mr. Hitt will share part of the responsibility of making the American Face Brick Association a smooth running machine with Secretary Hollowell.

Mr. Hitt, for a number of years, acted in the capacity of

traffic representative for various well known railroads and, during the war, was first lieutenant, corps of engineers, liaison officer to car section, general staff.

It is expected that this addition to the force of the association will be of much assistance in maintaining the previous high reputation for service.



Chicago Building Situation Cleared Up

After failing in conferences, discussions and arbitration to end the carpenters' strike in Chicago, which has for the past ten weeks held up millions of dollars worth of construction and forced the unemployment of one hundred thousand men in the building trades, the strike came to an end the latter part of last week when the arbitration committee of five carpenters, five carpenter contractors and five building material men agreed to the carpenter's demand for \$1 an hour.

Builders believed the sentiment of the rank and file of the carpenters was against the continuance of the fight for \$1 an hour and succeeded in obtaining a referendum ten days ago on two plans—one was, that the men return to work at 92½c until May 1, 1920, when a new wage of \$1 an hour would be granted; the other, to return to work at 92½c an hour and leave the amount of a permanent wage in the hands of an umpire. Both plans were put to a referendum and the votes stood overwhelmingly against both plans. The carpenters had been paid 80c an hour.

The brick and clay products men who ship their ware to Chicago will welcome the news of the end of the strike with pleasure. For the past ten weeks building has been at a stand-still in the Chicago vicinity and nary a brick was sold. It is expected that winter building in Chicago will break all previous records and a real boom in the construction industries is looked for.



Fire Prevention Week October 6-13

A nation-wide observance of Fire Prevention Week, more general than ever before will take place this year October 6-13. The eighth annual Safety Congress under the auspices of the National Safety Council will precede Fire Prevention Week, at Cleveland, Ohio, October 1-4.

October 9, the anniversary of the Chicago fire, is distinctly Fire Prevention Day. Elaborate preparations for a public program with prominent speakers and much publicity on behalf of everything that will aid in increasing protection against fire, will mark the day in Chicago and in many other cities.

The National Fire Protection Association, the National Safety Council, the various boards of underwriters, and many civic associations and industrial organizations are planning to help make the day an impressive object lesson for the entire American public.

In fact, the more than one hundred and twenty-five state, national and interstate organizations, who are constituent members of the National Fire Protection Association, will, it is expected, all participate in the observance of the day and week.



A federal charter has been issued to the London Clay Products, Limited, London, Ont. They are authorized to manufacture and deal in tile, sewer pipe, pottery and other clay products. The authorized capital is \$50,000. Incorporators include Calvin S. Parker, president of the Western Ontario Clay Products Association, whose plant at London has been acquired, and S. R. Welsh, formerly of the Main Belting Co.

BRICK TESTS *and* INVESTIGATIONS

Paper Read at The Seventeenth Annual Convention of The Canadian National Clay Products Association, Montreal, May 26, 27 and 28, 1919

By W. W. Pearse

City Architect, Toronto

AT THE PRESENT TIME Toronto's Building Department is busy revising their building by-laws. When the chapter on brickwork was reached it was found that the data available on Canadian brickwork was very meagre. The brick manufacturers that supplied the Toronto market kindly consented to allow the building department to visit their plants and select brick and have them tested. The results are tabulated in Table I. By referring to the table you

also decided to let the piers set for a period of about three months as this was considered the least time that the walls would be called upon to take their full load. It was also decided to build the piers in both lime and cement mortar of the following mixtures:

Cement mortar—1 part portland cement, 3 parts of sand and one-fourth part of hydrated lime, all by bulk.

Lime mortar—1 part lime to 3 parts of sand.

The piers were laid up during the month of June by an experienced bricklayer. They were 8 $\frac{5}{8}$ inches square in plan and were built so as to represent a portion of an ordinary brick wall one brick thick bonded by headers every sixth course according to common practice in the city of Toronto. In constructing the piers an effort was made to obtain a class of workmanship neither better nor worse than would be expected from men of ordinary skill. The crushing strengths of individual brick and of cubes of mortar six inches to a side, (the latter at an age of approximately three months) are as follows:

Lbs. per sq. in.

Modulus of rupture of individual brick.....	165
Crushing strength of individual brick.....	1,000
Crushing strength of lime mortar.....	235
Crushing strength of cement cubes.....	1,835

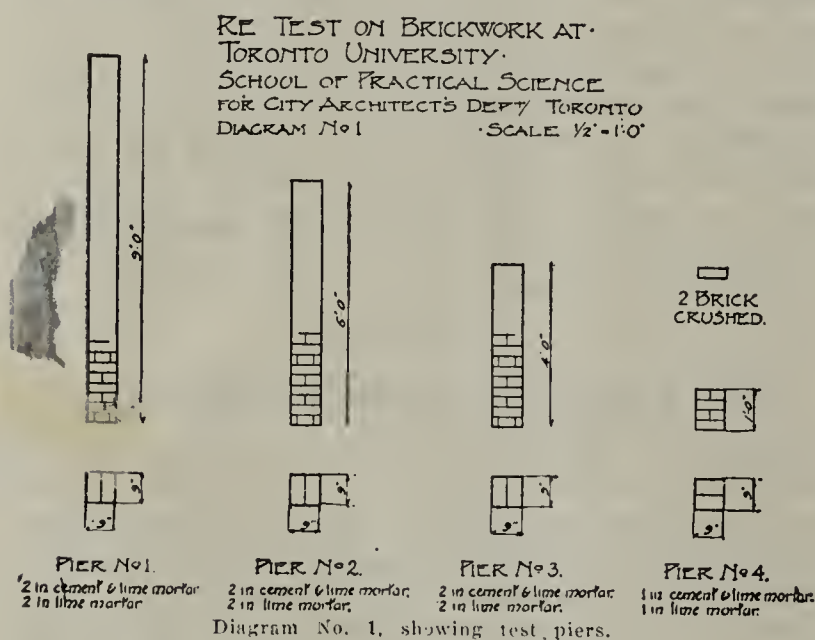


Diagram No. 1, Showing Test Piers.

will notice that the first column gives certain numbers. These numbers are the key to the manufacturer's name, which is held confidential. The brick selected were not the best brick manufactured by the different companies, but the type that was usually used as backing brick and only in a few cases did we select face or very hard brick, as usually that type of brick is only used for facing.

It was found that absorption entered into the strength of brick in compression. Brick having an absorption of 12 per cent. and under were on an average of about 38 per cent. stronger in compression and 85 per cent. stronger in bonding than the average brick absorbing more than 12 per cent. of moisture.

After the tests were made as shown in Table I, it was then thought advisable to try and arrive at a relation between the individual brick and brick laid up in piers, so a representative from the department selected one of the poorest types of brick from one of the leading manufacturers and they kindly donated the brick to build fourteen piers of different heights, the object being to derive a curve, if possible, that would give the strength of brick piers for different heights. It was

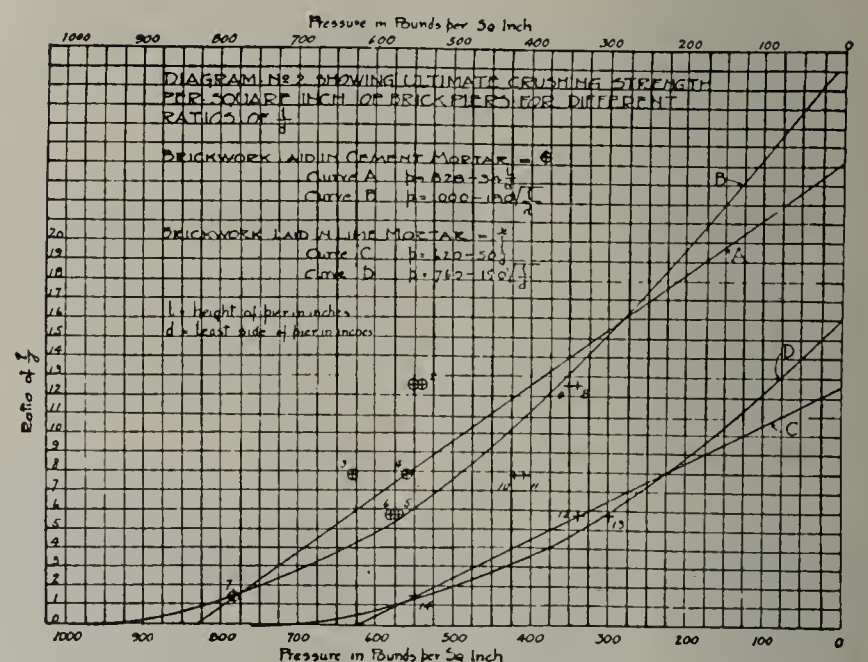


Diagram No. 2, Showing Crushing Strength Per Sq. In. of Brick Piers For Different Ratios of $\frac{l}{d}$

The piers were constructed on the 200,000 pound Richelie testing machine in the Strength of Materials Laboratory at the University of Toronto, under the direction of Peter Gillespie, Esq., associate professor of applied mechanics.

Each pier was built on a plate of $\frac{1}{4}$ inch steel, 13 inches square as a base, and capped in plaster of paris. In addition to the crushing strength of each pier, the amount of shortening due to load and the lateral deflection, if any, were obtained.

TABLE NO. 1

Absorption	Process	Centre load (7 in. between supports)	Area sq. in.	Crushing	Crushing lbs. per sq. in.
41 —14.2	Soft mud, rack and pallet yard	1,215	34.1	91,700	2,690
33 —13.8	Dry press	1,360	33.7	155,300	4,615
35 —17.9	Dry press	1,970	34.8	159,350	4,680
38 —11.53	Stiff mud setting off yard	1,945	31.4	113,600	3,610
11 —11.6	Stiff mud	1,980	44.5	115,690	4,515
62 —15.85	Hydrated lime	1,045	32.9	80,400	2,445
12 —15.7	Stiff mud, rack and pallet yard in summer	1,470	34.4	122,600	3,565
61 —20.9	Stiff mud, rack and pallet yard in summer	1,400	34.8	80,630	2,320
13 —9.96	Soft mud	3,285	32.9	202,800	6,170
60 —18.85	Soft mud, rack and pallet yard	1,160	36.7	82,600	2,250
14 —10.4	Soft mud	1,895	34.5	106,300	3,080
58 —11.2	Hydrated process	470	34.2	128,260	3,750
15.2 —4.26	Stiff plastic wire cut	4,100	33.1	202,800	6,135
57 —16.9	Soft mud, rack and pallet	1,160	34.9	91,400	2,620
16.2 —9.9	Stiff plastic wire cut dry press	2,050	33.9	120,520	3,555
56 —16.35	Soft mud, rack and pallet yard	1,180	34.2	98,510	2,875
17 —6.1	Stiff plastic, wire cut, dry press	2,650	34.5	202,800	5,880
55 —22.4	Stiff mud	2,135	36.6	99,050	2,700
18 —12.95	Stiff plastic	1,945	31.3	46,200	1,476
54 —14.6	Soft mud, rack and pallet yard	1,055	33.6	119,000	3,540
20.2 —12.56	Stiff mud	2,020	35.0	119,000	3,405
67 —24.8	Soft mud, rack and pallet	1,735	37.2	100,950	2,710
22 —14.52	Soft mud, rack and pallet yard	2,480	32.3	140,820	4,365
51 —21.9	Stiff mud setting off yard	2,785	35.8	107,470	3,000
23 —9.1	Hydrated lime process pan mixer	540	33.6	105,800	3,110
50.1 —14.85	Stiff mud setting off yard	3,740	33.0	158,600	4,815
46 —13.45	Stiff mud setting off yard	1,590	32.5	97,200	2,985
45 —14.65	Stiff mud setting off yard	1,045	25.6	71,700	2,010
43 —19.6	Stiff mud setting off yard	2,355	32.5	132,080	4,080
1 —10.3	Quick lime	1,005	32.6	97,900	3,000
73 —7.1	Machine mixed sand with portland cement	1,100	34.0	82,250	2,420
2 —6.4	Hydrated lime	1,610	23.2	154,200	4,640
71 —17.0	Stiff plastic wire cut	3,070	35.2	169,480	4,820
3 —19.6	Dry press	1,620	34.0	194,600	5,720
68 —13.25	Hydrated lime, pan mixed	660	35.7	50,740	1,645
70 —15.81	Stiff plastic wire cut	2,640	35.6	202,800	5,700
4.2 —12.4	Dry press, stiff plastic wire cut	1,620	32.4	151,600	4,680
67 —9.26	Hydrated lime, pan mill mixed	845	33.7	79,960	2,375
5 —19.3	Stiff plastic wire cut	2,750	33.0	202,800	6,150
65 —16.3	Rack and pallet yard	1,155	34.2	70,900	2,070
6 —3.64	Plastic wire cut	5,320	32.7	202,800	6,215
21 —9.15	Soft mud	2,220	32.6	126,940	3,890
7.1 —6.06	Stiff plastic wire cut	3,760	33.9	202,800	5,980
7.2 —18.5	Stiff plastic wire cut	1,170	33.1	202,800	6,135
64.5 —25.35	Stiff mud, stiff plastic, dry press	1,210	34.6	157,040	4,530
64.4 —12.68	Stiff mud, stiff plastic, dry press	1,935	35.1	202,800	5,780
64.5 —19.0	Stiff mud, stiff plastic, dry press	1,770	34.4	93,700	2,720
64.6 —20.0	Stiff mud, stiff plastic, dry press	1,150	32.8	37,300	1,145
8 —12.1	Dry press	1,980	34.1	181,240	5,320
63 —14.46	Dry press	1,200	34.3	117,160	3,420
10 —13.86	Dry press	1,975	33.0	165,900	5,020
24 —12.25	Quick lime process, pan mill mixed	730	35.5	80,970	2,275
25 —12.5	Soft mud, rack and pallet yard	1,440	34.2	100,800	2,950
27 —26.7	Soft mud, rack and pallet yard	1,335	33.1	89,400	2,700
30 —14.6	Dry press	2,140	34.2	183,500	5,370
42.2 —23.35	Stiff mud setting off yard	1,710	33.8	105,950	3,130
42.1 —15.4	Stiff mud setting off yard	1,760	33.6	126,000	3,750
31 —16.4	Dry press	2,300	34.4	202,800	5,900
32 —15.15	Dry press and stiff plastic wire cut	1,895	33.9	202,800	5,980
34 —15.6	Dry press	1,625	32.9	147,100	4,470
37 —12.8	Stiff mud setting off yard	1,500	34.4	139,000	4,040
40 —11.25	Soft mud setting off yard	1,050	34.4	80,840	2,350

As mentioned before, the investigation was to determine, if possible, the relation between strength and slenderness and for that reason values of the ratio of length to diameter lying between 1.4 and 12.5 were provided for in the program by varying the length from 1 to 9 feet. A course of brick

including mortar joints averaged 3 inches in depth. Blue prints attached show details of how the piers were built. See diagram No. 1.

Referring to diagram No. 2 it will be noticed that points have been plotted for different ratios of $\frac{l}{d}$ and then a straight line formula has been plotted for the cement piers, namely:

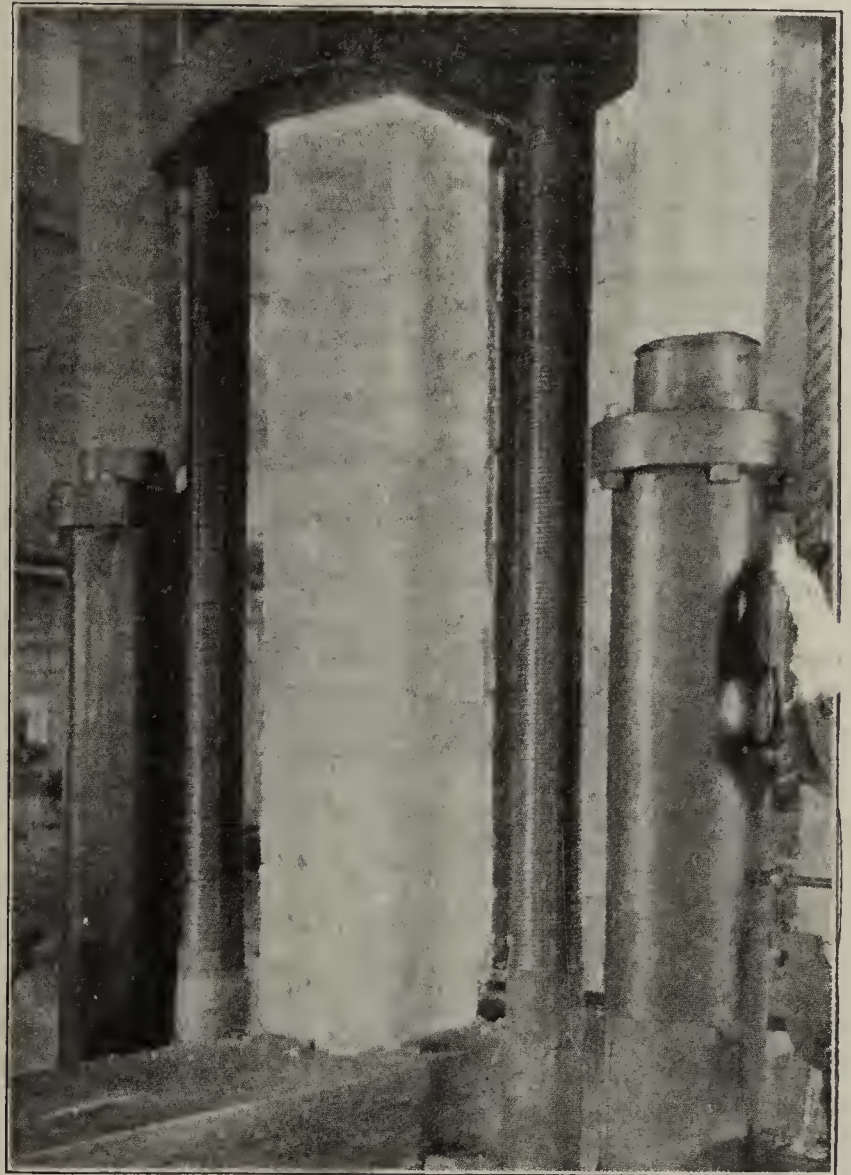
$$p = 828 - 34 \frac{l}{d} \quad \text{See straight line A.}$$

Where p = ultimate pressure per sq. in.

l = length of pier in inches.

d = thickness of piers in inches.

A parabolic curve has also been plotted making the curve



Pier Undergoing Test at Toronto University.

tangent at 1,000 lbs. (ultimate crushing strength of the individual brick) and the least crushing strength of pier No.

5 whose slenderness ratio is $\frac{l}{d} = 5.7$ and crushing strength

per square inch of 570 pounds or $p = 1000 - 180 \frac{l}{d}$ See curve "B", diagram No. 2.

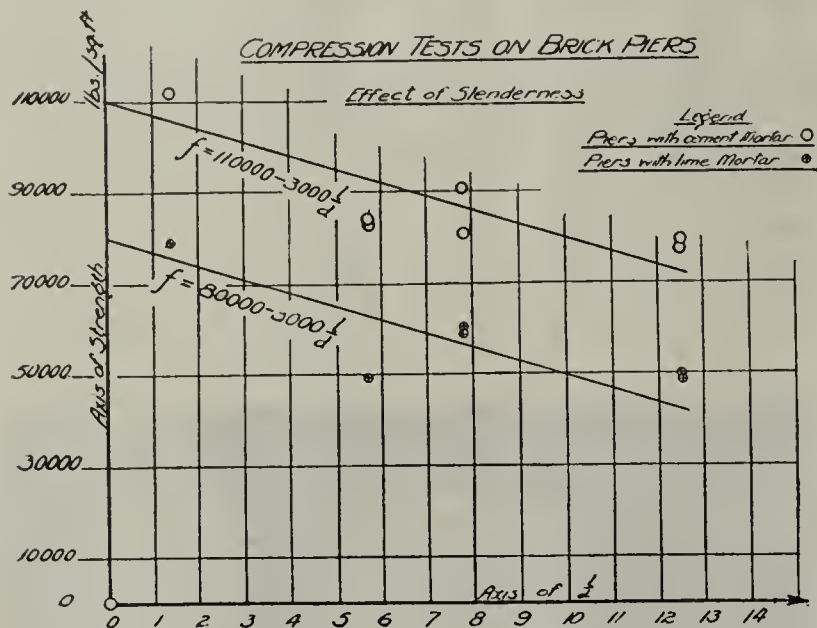
It will be noticed that the straight line A passes thru the point plotted for pier No. 4, having a crushing value of 560 lbs. per sq. in. and the point plotted for pier No. 7 having a crushing value of 780 lbs. per sq. in.

The piers built in lime mortar will now be considered.

Referring to diagram No. 2, straight line C has been drawn thru the point plotted for pier No. 14 having a crushing value of 550 lbs. per sq. in. and then an average point is taken between the points plotted for piers No. 12 and No. 13.

The equation for this straight line is $p = .620 - 50 \frac{1}{d}$.

A parabolic curve, $p = 760 - 190$ times the square root of 1 over d, has passed thru the points plotted for piers No. 14 and No. 13.



Line Formerly Suggested by Prof. Peter Gillespie as Result of Tests on Brick Piers.

Johnson, Bryan, Turneure, in Modern Framed Structures, Part III, suggest a parabolic equation for the strength of columns and by referring to diagram No. 2 it will be seen that it agrees well with tests.

Load, deformation curves have been plotted and from these the modulus of elasticity (E) of the masonry was found.

The area beneath the curve is a measure of the work done in producing failure and if this when done be divided by the volume of the pier, the result will be analogous to the common "coefficient of resilience." This is used to measure the capacity of the material or structure to resist shock, or

$$R = \frac{p^2}{2E} \text{ where}$$

R = is the ultimate resilience per unit of volume.

p = is the strength of the material, and

E = is the modulus of elasticity.

For the twelve piers observed, this coefficient has been worked out in inch pounds per cubic foot, with the following as the values:

Pier	Mortar	Resistance to Shock
1	Cement	955 in. lbs. per cu. ft.
2	Cement	950 in. lbs. per cu. ft.
3	Cement	1,075 in. lbs. per cu. ft.
4	Cement	970 in. lbs. per cu. ft.
5	Cement	1,215 in. lbs. per cu. ft.
6	Cement	1,060 in. lbs. per cu. ft.
	Average	1,040 in. lbs. per cu. ft.
8	Lime	565 in. lbs. per cu. ft.
9	Lime	525 in. lbs. per cu. ft.
10	Lime	645 in. lbs. per cu. ft.
11	Lime	715 in. lbs. per cu. ft.
12	Lime	865 in. lbs. per cu. ft.
13	Lime	630 in. lbs. per cu. ft.

Average 650

The resistance to shock is 60 per cent. greater where cement mortar is used than where lime mortar is employed.

CRUSHING STRENGTH

The following tables give the observed values of the crushing strength for the fourteen piers tested:

Pier	Cement Mortar Strength	Pier	Lime Mortar Strength
1	550 lbs. per sq. in.	8	340 lbs. per sq. in.
2	540 lbs. per sq. in.	9	350 lbs. per sq. in.
3	630 lbs. per sq. in.	10	420 lbs. per sq. in.
4	560 lbs. per sq. in.	11	410 lbs. per sq. in.
5	570 lbs. per sq. in.	12	340 lbs. per sq. in.
6	580 lbs. per sq. in.	13	300 lbs. per sq. in.
7	780 lbs. per sq. in.	14	550 lbs. per sq. in.

The average strength of the cement mortar series is nearly 60 per cent. greater than the average strength of the lime mortar series.

These tests were witnessed wholly or partially by Messrs. Sykes, Carter and Steen of the city architect's department, city of Toronto.

The test records follow:

PIER NO. 1

Tested Sept. 25, 1918.

Age, 105 days.

Height, 9 ft. $\frac{1}{4}$ in. = 36 courses.

Mortar, cement.

E = 294,000 lbs. per sq. in.

Strength = 79,600 lbs. per sq. ft. = 550 lbs. per sq. in.

l/d = 12.5.

Load lbs.	Deformation, ins.	Load lbs.	Deformation, ins.
000	.000	22,800	.120
2,500	.008	27,600	.134
5,800	.032	32,700	.163
10,000	.056	38,600	.196
13,800	.094	41,200	failed
18,200	.094		

PIER NO. 2

Tested, Sept. 28, 1918.

Age, 108 days.

Height, 9 ft. $\frac{1}{4}$ in. = 36 courses.

Mortar, cement.

E = 264,000 lbs. per sq. in.

Strength = 77,800 lbs. per sq. ft. = 540 lbs. per sq. in.

l/d = 12.5.

Load lbs.	Deformation, ins.	Load lbs.	Deformation, ins.
000	.000	29,400	.160
1,200	.000	38,000	.208
10,800	.068	40,200	failed

PIER NO. 3

Tested, Oct. 3, 1918.

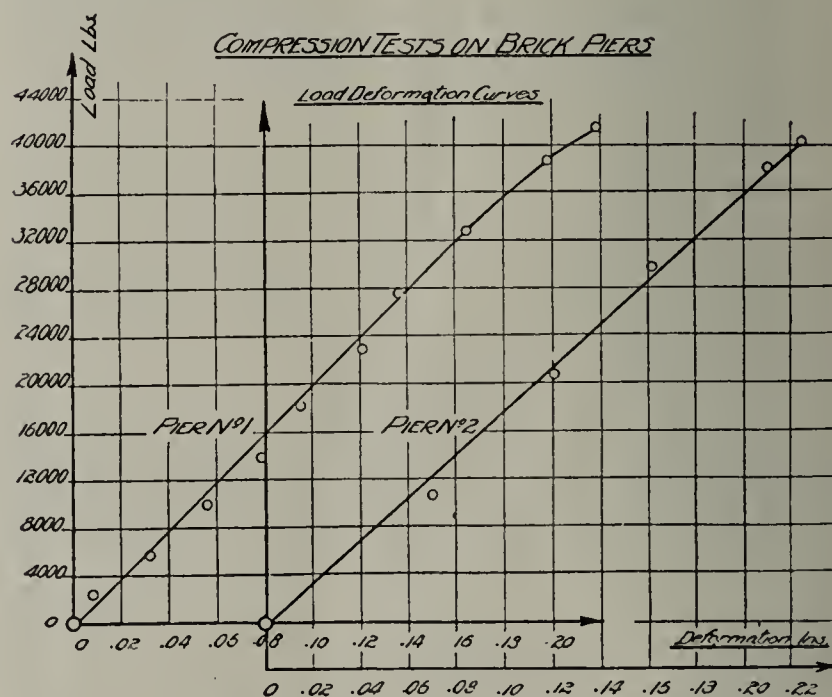


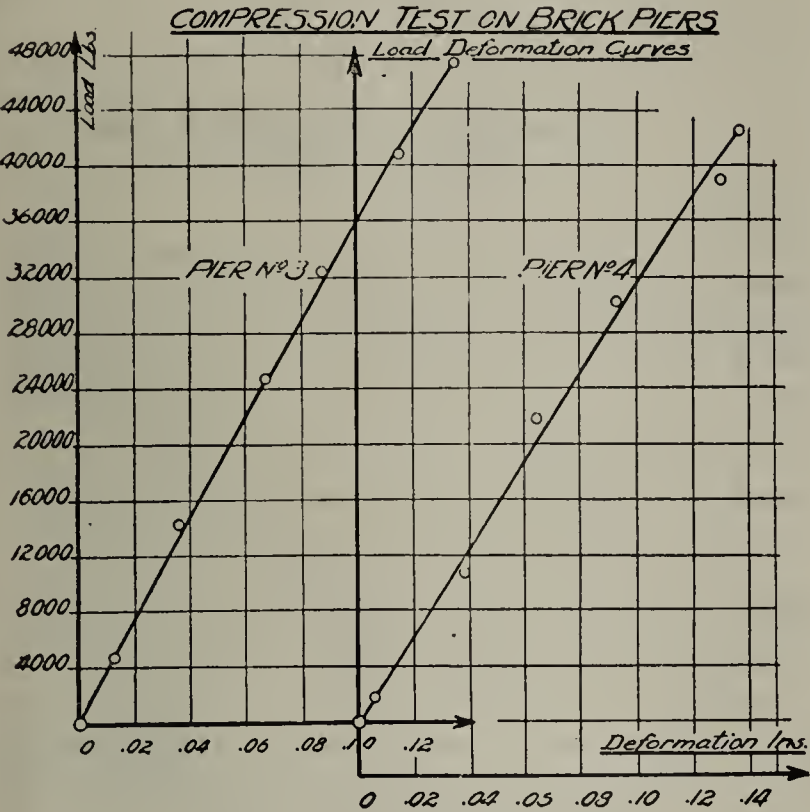
Chart on Piers No. 1 and No. 2.

Age, 108 days.

Height, 5 ft. $7\frac{1}{2}$ in. = 22 courses.

Mortar, cement.

E=330,000 lbs. per sq. in.
Strength=91,100 lbs. per sq. ft.=630 lbs. per sq. in.
l/d=7.8.



Test on Piers No. 3 and No. 4.

Load lbs.	Deformation, ins.	Load lbs.	Deformation, ins.
000	.000	32,200	.087
4,600	.012	40,800	.114
14,200	.036	47,000	failed
24,600	.066		

PIER NO. 4

Tested, Oct. 7, 1918.
Age, 112 days.
Height, 5 ft. 7½ in.=22 courses.
Mortar, cement.
E=284,000 lbs. per sq. in.
Strength=81,000 lbs. per sq. ft.=560 lbs. per sq. in.
l/d=7.8.

Load lbs.	Deformation, ins.	Load lbs.	Deformation, ins.
000	.000	29,800	.092
1,600	.005	38,600	.129
10,700	.037	41,800	failed
21,600	.063		

PIER NO. 5

Tested, Oct. 8, 1918.
Age, 112 days.
Height, 4 ft. 1 in.=16 courses.
Mortar, cement.
E=234,000 lbs. per sq. in.
Strength=82,700 lbs. per sq. ft.=570 lbs. per sq. in.
l/d=5.7.

Load lbs.	Deformation, ins.	Load lbs.	Deformation, ins.
000	.000	31,000	.084
800	.000	37,200	.103
10,400	.032	42,600	failed
21,000	.059		

PIER NO. 6

Tested, Oct. 8, 1918.
Age, 112 days.
Height, 4 ft. 1 in.=16 courses.
Mortar, cement.
E=276,000 lbs. per sq. in.
Strength=83,700 lbs. per sq. ft.=580 lbs. per sq. in.
l/d=5.7.

Load lbs.	Deformation, ins.	Load lbs.	Deformation, ins.
000	.000	30,000	.071
2,200	.005	38,000	.090
13,000	.033	43,200	failed
20,000	.045		

PIER NO. 7

Tested, Sept. 25, 1918.
Age, 107 days.
Height, 12½ in.=4 courses.
Mortar, cement.
Crushing strength=58,000 lbs.=112,000 lbs. per sq. ft.=780 lbs. per sq. in.
E was not determined.
l/d=1.4.

PIER NO. 8

Tested, Sept. 26, 1918.
Age, 107 days.
Height, 9 ft. ⅛ in.=36 courses.
Mortar, lime.
E=215,000 lbs. per sq. in.
Strength=49,200 lbs. per sq. ft.=340 lbs. per sq. in.
l/d=12.5.

Load lbs.	Deformation, ins.	Load lbs.	Deformation, ins.
000	.000	14,200	.091
1,600	.012	17,800	.118
7,200	.042	21,600	.150
12,000	.073	25,400	.207 failed

PIER NO. 9

Tested, Sept. 27, 1918.
Age, 108 days.
Height, 9 ft.=36 courses.
Mortar, lime.
E=208,000 lbs. per sq. in.
Strength=50,000 lbs. per sq. ft.=350 lbs. per sq. in.
l/d=12.5.

Load lbs.	Deformation, ins.	Load lbs.	Deformation, ins.
000	.000	15,200	.106
2,000	.016	20,000	.144
9,400	.062	25,800	failed

PIER NO. 10

Tested, Oct. 1, 1918.
Age, 110 days.
Height, 5 ft. 7½ in.=23 courses.
Mortar, lime.
E=242,000 lbs. per sq. in.
Strength=60,500 lbs. per sq. ft.=420 lbs. per sq. in.
l/d=7.8.

Load lbs.	Deformation, ins.	Load lbs.	Deformation, ins.
000	.000	21,800	.079
3,000	.012	26,500	.106
8,200	.030	31,200	failed
16,800	.054		

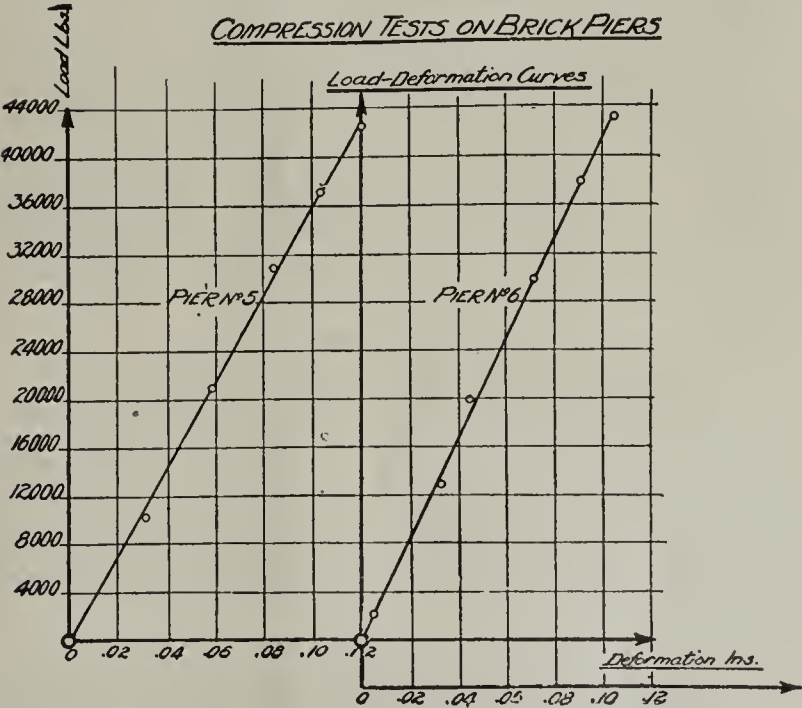


Chart for Piers No. 5 and No. 6.

PIER NO. 11

Tested, Oct. 2, 1918.
Age, 111 days.

Height, 5 ft. 7½ in.=23 courses.

Mortar, lime.

E=214,000 lbs. per sq. in.

Strength=59,300 lb. per sq. ft.=410 lbs. per sq. in.

1/d=7.8.

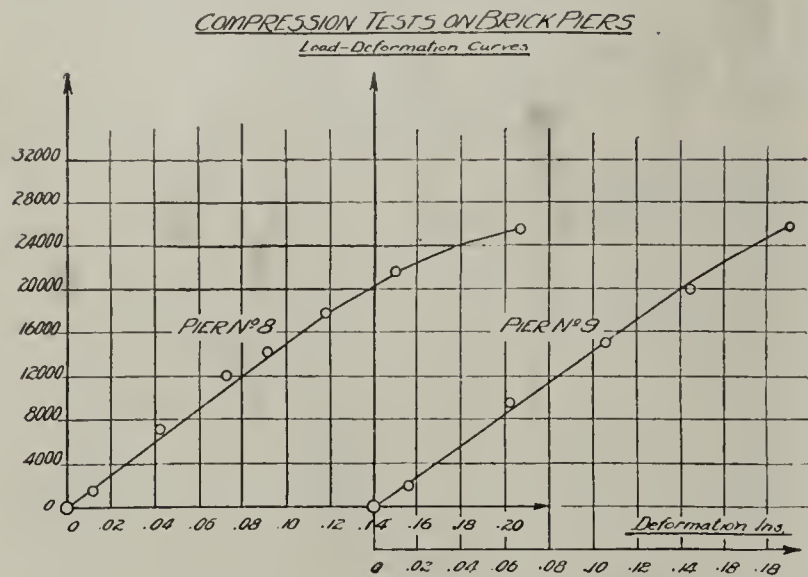


Chart on Piers No. 8 and No. 9.

Load lbs.	Deformation, ins.	Load lbs.	Deformation, ins.
000	.000	19,000	.078
4,600	.022	24,200	.105
10,600	.042	30,600	failed

PIER NO. 12

Tested, Sept. 21, 1918.

Age, 94 days.

Height, 4 ft. ¾ in.=16 courses.

Mortar, lime.

E=119,000 lbs. per sq. in.

Mortar, lime.

E=214,000 lbs. per sq. in.

Strength=49,600 lbs. per sq. ft.=340 lbs. per sq. in.

Load lbs.	Deformation, ins.	Load lbs.	Deformation, ins.
000	.000	19,600	.108
4,500	.023	22,200	.123
9,500	.048	25,600	failed
15,300	.088		

PIER NO. 13

Tested, Sept. 21, 1918.

Age, 94 days.

Height, 4 ft. 7/8 in.=16 courses.

Mortar, lime.

E=142,000 lbs. per sq. in.

Strength=24,700 lbs. per sq. ft.=300 lbs. per sq. in.

1/d=5.6.

Load lbs.	Deformation, ins.	Load lbs.	Deformation, ins.
000	.000	18,300	.089
2,000	.010	21,000	.119*
9,400	.042	22,000	failed
14,400	.063		

*First cracks, 7th and 8th from bottom.

PIER NO. 14

Tested, Sept. 21, 1918.

Age, 95 days.

Height, 12½ in.=4 courses.

Mortar, lime.

Crushing strength=40,800 lbs.=79,200 lbs. per sq. ft.=550 lbs. per sq. in.

E was not determined.

SUMMARY

1. The strength of the strongest pier laid in cement mortar was 78 per cent. of the strength of the individual brick.
2. The strength of the strongest pier laid in lime mortar was 55 per cent. of the strength of the individual brick.
3. Brick masonry laid in cement mortar is about 50 per cent. more rigid and 60 per cent. stronger than that laid in

lime mortar, and the resistance to shock is 60 per cent. greater in the former than the latter.

4. Longitudinal or vertical rupture thru bonding courses occurred very frequently.

5. No appreciable shrinkage in height could be observed

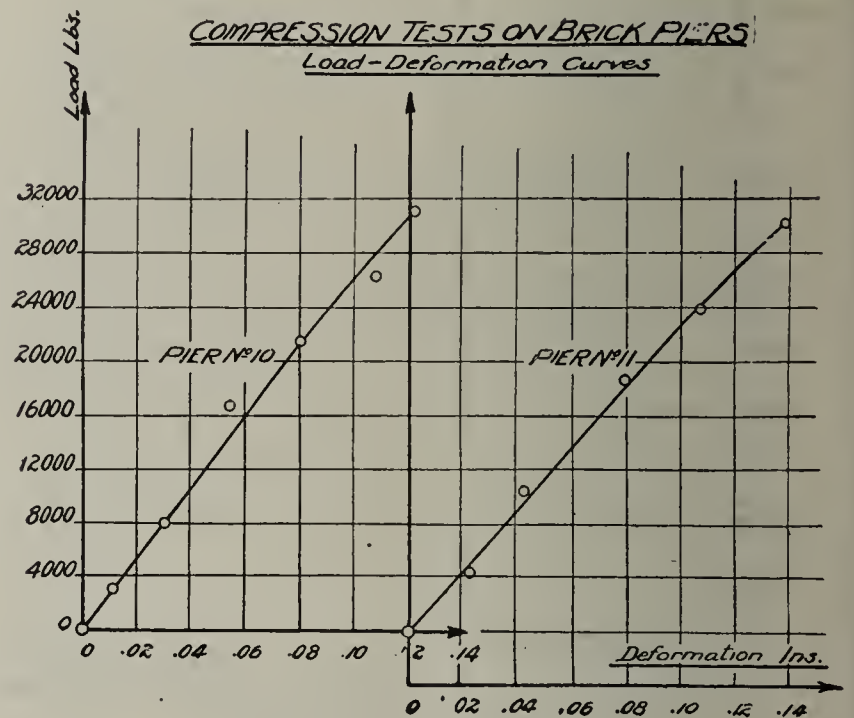


Chart on Piers No. 10 and No. 11.

during the first month after construction. After this period, measurements were discontinued.

6. Lateral deflections under load were in most cases so small as to be almost incapable of measurements with a scale divided into 100th of an inch.

7. As a result of the test, the following formulas for the strength of brick piers in lbs. per sq. in. are suggested. The former is for cement and the latter for lime masonry:

$$P = 828 - 34 \frac{1}{d}$$

$$P = 620 - 50 \frac{1}{d}$$

Some very valuable tests were made by the Department of Commerce, Technologic Papers of the Bureau of Standards, No. 111, Washington, D. C. The test were made on large

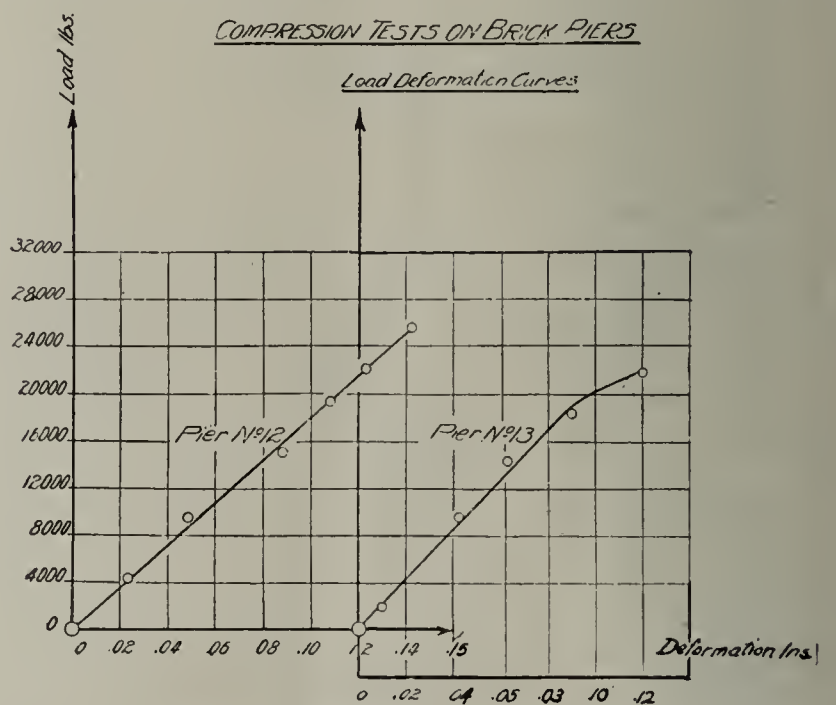


Chart on Piers No. 12 and No. 13.

brick piers and a general survey was made of all previous tests conducted on the subject.

In having the tests made at the Toronto University I had

in view trying to get up a curve or straight line that would be reasonably safe to be used for different rates of $\frac{1}{d}$, but the few tests made of course would not warrant anything definite, but I hope this year to have a great number of brick piers tested so that a reasonable formula for brick work may be arrived at.

It is also the intention to have tile piers tested of the same length as those of the brick and in this way it will be possible to get at a comparison of the strength of tile piers and brick, and any other building material will be treated the same way so that the department may take brick as unit and the different materials may be considered either better or worse than brick.



Emphasizing the Value of Brick for House Construction

Prominent newspapers thruout the country in months past have been urging the construction of homes to encourage the building movement to the greatest extent, reproducing plans in outline, elevations, etc., to inspire the prospective builder and provide suitable ideas for the proposed home. In connection with this promotion work, the advancement of brick as *the* material for the expensive or modest house has been distinctly noticeable, and particularly so in the larger communities.

In advocating brick structures, the enduring qualifications of the material have been pointed out, with the distinctiveness and individuality found in houses of this type. The merits of permanency, stability, beauty and other attainments to be derived are set forth, with emphasis on the economy of brick for the new home in the long run. This prominent publicity has unquestionably resulted in the selection of this material for many new houses, as the building records of different cities show, while additionally, it has been bearing of exceptional good in impressing the builders of future homes with the definite qualities of this basic construction material.

Two noticeable instances recommending the use of brick for residence service along the lines noted have occurred recently in New York daily papers, giving a specific example of the extent to which this material is being advanced in eastern centers. In an issue of the "New York Evening Sun," early in September, an illustration of a brick house, with outlined floor plans was set forth in a prominent way on the building page, with bold caption reading: "The Brick House Always Looks Dignified and No Material is a Better Investment for the Home Builder."

Following, as preliminary to a description of the particular house, the article said: "Brick has always been a building material of unquestioned beauty, and modern processes now put at your disposal an almost unlimited variety of brick of great hardness and durability. Brick is suitable for any locality and for any size structure, whether it be a tiny studio cottage of three rooms or a Newport cottage of sixty.

"Tapestry brick in autumnal shades of reds, browns, tans, and bronzes, and perhaps an occasional blue for variety, looks well at all seasons of the year. In the fall such a house seems a veritable part of the landscape. In winter it is warm and attractive in its white mantle of snow. In the summertime it forms a fine background to any flower color. A red brick house or, one of light tan pressed brick requires careful selection of flowers to keep a harmonious color scheme. This house could be roofed with slate, tile, asbestos or wood, ac-

cording to the amount of money the owner wishes to invest."

Speaking of a terrace at the rear of the house, between the dining room and the porch, as shown on the floor plan, it is set forth that, "This terrace could be tiled with the same brick as the house or in large square tiles of some soft shades of green or red."

Following a description of the home in its different features, the article, in conclusion, says: "Because this house is planned to be built of brick and will endure for many years without showing signs of deterioration, and, also, because brick is a fire resisting material, everything that goes into its interior finish should be of the very best."

The second reference noted covers more of a direct suggestion regarding the utility and beauty of brick rather than a flat recommendation. The "New York Tribune" has been running a suburban home contest, offering cash prizes for pictures of prize-winning residences. The first prize of \$250 has been awarded to the brick residence of Frank Young, Lookout Avenue, Hackensack, N. J., Wesley S. Bissell, architect. In describing this home in the Sunday rotogravure section, the paper says:

"This house, which reminds one of the quaint English homes of the sixteenth century, cost \$22,000 to build in 1914. It is built on the side of a hill overlooking a beautiful valley, and is of many colored brick, with red predominating, running into dark blues, browns and salmon colors. The rear view of the kitchen wing shows the heavy slated roof and the massive brick chimney that is an outstanding feature."

Numerous other instances might be cited along these same lines, but these will go to show the importance that metropolitan dailies are giving to the subject of "build with brick." The brick manufacturer and the mason material dealer must keep abreast of the situation, for with this local and national promotion work, reaching the notice of prospective builders and at a time when they are receptive, the call for fine face brick, building brick, tile and the like is sure to increase.



Your Attention Is Called—

to the fact that only a few more days remain in which you may send in your trade name suggestion for the Los Angeles Pressed Brick Co., who have offered a \$50.00 Victory Loan Bond as a prize to the one who submits the trade name they choose as most suitable for their products.

Remember the name should be short, easily remembered and not hard to pronounce—a hyphenated name would not be objectionable, but a name of one word with not more than five letters would be preferable.

All suggestions must be in the hands of *Brick and Clay Record* by September 30.



Eighth Annual Safety Congress

The Eighth Annual Safety Congress will convene at the Hotel Statler, Cleveland, Ohio, October 1 to 4 inclusive. This meeting will be under the auspices of the National Safety Council. There will be an unusually large number of speakers present and four general sessions will be given over to the following subjects: "Employes' Representation," "Americanization," "Health" and "Safety Education." Round table discussions on such subjects as "Employes' Benefit Associations," "Employes' Publications," "General Accident Prevention," and "Safety Bulletins" will also be given.

Other features at this meeting will be a very elaborate safety exhibit, sectional meetings, and a banquet and entertainment.

GERMS *of* OPTIMISM

*The Forerunner of a Building Era—An Address Before
The New York and New England Brick Manufacturers, at
The Ten Eyck Hotel, Albany, N. Y., September 17, 1919*

By Allen E. Beals,

*of the Allen E. Beals Corporation, Publishers of the
Dow Service Daily Building Reports*

THE PLEASURE that I have in being privileged to participate in this important conference with you is marred by only one thing; my complete inability to present facts that I have brought with me with anything like the oratory they so sadly need. I come here not as an orator, not as a prophet. I am only a business man, accustomed to analyzing the problems of the day, even as you do. I have brought with me only the fundamentals of the business economics as they exist today as I view them and present them to you as one would present a portrayal of basic business conditions upon which you can base your own conclusions as you find that they fit into your own manufacturing and selling problems.

We meet today upon the outer edge of a triangle consuming annually in normal times, about 5,000,000,000 brick, if New Jersey is included in the classification. This same district this year will consume barely more than two billion brick. It is the leanest year for clay products the eastern industry has ever known.

We face discouragement as we wonder what the forthcoming year has in store for us. Labor disturbances, a warped condition of monetary exchange, general hesitancy in construction work, lack of workmen and difficulty in obtaining labor-saving machinery. Tightness of bank credits and an industry hitherto without co-ordinated means of stimulation; all combine in their peculiar ways to stagnate the imagination, to build a barrier against creative thought and prompts us to await the clearing days.

We little realize that the clearing days are right at hand. To one whose niche is near the center of the building industry, who almost daily feels the pulse of finance and material supply, that alters city skylines and makes more prosperous the small suburban towns, the dawn of better things appears to be already advanced. I am permitted unofficially to state that the employers and employees of the building trades in New York have already reached a point where they not only have expressed a willingness to sit around a conference table each with the thought foremost to find an even plane of understanding and cooperation, *but, that such conferences have already actually taken place and are in progress right now in New York.* Yesterday I attended a conference in the executive office of Governor Smith and heard of still other plans for keeping the wheels of industry in this great state moving. We merely need a directing hand to show these things—these changes that have come to pass—to realize that a stealthy change is creeping in, the forerunner of a building era, almost beyond the power of the human mind to gauge.

Tremendous changes in standards of wages, standards, of cost, standards of conducting business, aye, even standards of construction, face you brick manufacturers today.

You cannot catch up with the onward march of progress unless you start when and where the other industries essay the forward step. Times will not permit the weakling to be dragged along, and the crumbs that drop along the way, will make but meagre fare for straggling industries. To cite:

The biggest building year the country ever had in 1916, developed about a billion and a half dollars' worth of construction. The greatest volume of building materials of all kinds that all the building material manufacturers or all the country ever turned out in a single year totalled in value barely two billion. That was in the day when labor was plentiful and friendlier to capital, before war laid its heavy hand upon man power in this country; today it is estimated that all the manufacturers of all the 3,000 kinds of building materials and equipment that can enter into the construction of a modern building, cannot turn out more than \$900,000,000 worth of materials while the potential volume of building required at this very minute would cost \$4,500,000,000.

Ponder for a moment what such a stupendous figure means in a construction program for the immediate future. Consider, also, that about one-fifth of all this total of prospective construction is called for right in *this* triangle which is represented here by you today. Then remember that in all of New York City at this time there is not as much work actually in progress as there was when the country was at war and the Government had a complete ban on all non-essential construction work.

A CREDITOR NATION, BUT—

We were wont to point with pride that we emerged from the world war with our country in better condition than it was when it emerged from the Civil War. We were then a debtor nation. Today we are a creditor nation, but we are fast being disillusioned from the belief current during the early part of the year, that that distinction was a glorious one. The scenes of more recent days have given us another insight into what this privilege means. It seemed a jolly thing to pile up supply for foreign needs, but when it meant long credits resulting in inflated exchange and then attempts, with considerable success, alas, to unload the stored up goods that Europe finally did not buy upon domestic markets, not at lower prices, but at prices that a rashly spending public could be made to pay, that was a different story.

Perhaps you wonder how this affected building. It first disturbed the savings funds and they in turn affected the great lending institutions. Whoever had funds laid aside for building when the war should end, found costs would shrink the size and richness of the home they had in mind. To Wall Street then, to speculate, to increase if possible

the nest eggs set aside for building purposes. The million and two million share days tell the tale.

When building waned the lumber boats that used to ply the coast found cargoes scarce and were diverted to the Belgian food carrying trade. The barges that hauled crude plaster rock from Canada were retained in large measure by the Government. The rails were clogged and then when they were cleared, there came car shortages and Canadian lumber embargoes that kept the dealers from a full supply. You know the story of the fleets of barges that once near-filled the Hudson's traffic lanes. The bags that once were used for packing cement went into other trades, and barrels too, found use for crackers and other foods destined for foreign lands and armies.

The glass that once went into windows in tremendous store front plates became windshields for autos and rear peek-plates for even ordinary cars at twice the price the building trades were wont to pay.

Crushed stone, sand, cement and gravel went into roads instead of homes in the accustomed volume and business palaces and factories while common brick assumed the role in spots at least, of peace-time ammunition for warring union sympathizers seeking shorter hours and higher pay.

THE COUNTRY'S BUILDING NEEDS

The actual present day requirements of this country is a million homes. This is an estimate made by the Department of Labor. The country needs about 128,000 factories, costing \$100,000 or over; about 325,000 factories less than that; more than 6,000 hotels, nearly 5,000 schools and public institutions, 55,000 apartments, about 120 major freight terminals, 14,000 railroad stations and freight sheds and nearly 20,000 theatres and churches.

Only about 40 per cent. of this total is actually under way at this time of which the district represented by this conference shows the lowest proportion. The greatest proportion of actual building work is that section known as the Middle West.

One reason for this condition is that the Middle West and the Coast have been alive to several things, chief among which is the fact that the armistice is signed, that sooner or later peace will formally be declared and that it is useless to wait for building materials to decline before authorizing architects to proceed with plans to build.

Comparisons are always odious. If there is anything that an easterner detests it is to be told that just because the West is doing a certain thing he should go and do likewise. It is undeniable that conditions heretofore have been different here than in the west. Conditions of brick distribution in this part of the country have been essentially peculiar in our own needs. You have been satisfied to stand pat and you have.

There is, however, a new condition which has to be faced today. It starts with the shrunken value of the dollar and it ends with business standards, not as they exist today, but as they will be when industrial peace has been restored and the true element of demand and supply once more becomes operative. In other words, common brick, the most basic of all building materials, that which is still first thought of when perfection in fireproofing and 100 per cent. safe construction is considered, stands unsponsored and unsung in what presently will be the richest building construction market of all time. The shrunken value of the present dollar suggests caution which has been permitted to lap over into parsimony, but the times demand commercial vision that reaches over into a business era whose scope and magnitude will far surpass anything the world has ever known and one-fifth of it will be right at your very doors. Let us see what this means.

We have said that the country's present need is a million homes. That is correct as of last March. Six months have elapsed and 300,000 more homes are needed now than were needed then. Half of these homes have been made necessary by marriages, the remainder is chargeable to speculative building enterprises, replacement by fire, wind and flood and some to building enlargement. To be exact, every normal year, this country required about 600,000 new homes or places of abode which includes apartments and hotels. It is apparent that with a back log, made up of such a factor alone, running over two or more years of war and rumors of war that it will be many years before there can be even the semblance of a dearth of building work and consequent demand for common brick, one-fifth of which will come from New York, Massachusetts, Connecticut and New Jersey.

I believe that I am close enough to the financial and contracting side of the consuming markets to say that from this day to one many years hence, it will not be a question with the prospective builder as to whether the price of building materials is to go down, but rather, "will the cost of assembling building materials remain steady enough for me to start and finish my operation."

MUST ENCOURAGE HIGHER PRODUCTION

I also confidently believe that the price of building materials will reach its peak when labor wage scales have been fixed upon a level that will insure for the worker, not only a living wage for his work, but will give him an opportunity to save enough to own his own home. I venture to express the belief here also that before you will be able to meet the full requirements of the abnormally great building demand that is sure to come and to remain for a long time, you will have to fix a wage and piece-work scale, or some other plan of encouraging higher production. If not this, then some sort of profit-sharing basis for your manufacturing staff for the very simple reason that the product that will count most in the stampede for building material supply in the near future will be the manufacturer who can produce the maximum of his plant capacity, day by day thru the entire manufacturing season, for he will need every brick he can lay his hands on. Strikes and shutdowns will be so costly as to be prohibitive. I say this with full knowledge of the calibre of men you are obliged to engage for your yard work and I include them in the general survey. He is as much a factor in production as any other employe and such a man, will soon win back from Europe, with the tales of his prosperity, the thousands who are still flocking to alien shores and thus placing a premium upon the head of every other man who stays here.

I was invited to come here today to bring a few germs of optimism. I am not quite sure whether the foregoing remarks are properly within that classification. To my mind there are so many facets of optimism in the industrial crystal we are peering that it would hardly damage the whole perspective, if we, for a moment, stood face to face with a slight blur upon an otherwise roseate horizon.

You as captains of a great industry start the new era of prosperity with at least one factor in your favor that is denied to producers of other commodities. It is that by your close adhesion to actual cost in fixing your market prices you have kept the cost of building materials 23 per cent. below the price of actual commodities, so that the prewar dollars will today go farther in producing buildings than will the same dollar expended in commodities in general. It is largely responsible for the fact that altho general commodities have been advanced 116 per cent. over what they were in the days before the great conflict, construction costs have advanced only 60 to 100 per cent. over what they were prior to 1917. This in spite of double the freight rates of 1916.

These percentages stand to be even reduced by reason of

the nation-wide movement to introduce a form of standardized buildings of all kinds, thereby largely eliminating wastefulness at the specification point.

There are more factors operating in favor of a quick and general revival of the building industry than has ever before been known. It is not the part of practical business men to stand aside and wait, but, by cooperation and one-ness of

purpose to instill that confidence into the hesitating builder that will at once bring him into the market for your products. The right, the sane, timely thing to do is to stand up like Americans of red blood and fire and set a visionary barrage over the no mans' land of doubt and momentary discouragement and achieve your objective—for it's yours to have and to hold.



JAN. 20 to be "OWN YOUR OWN HOME" DAY

THE NATIONAL WAR WORKS COUNCIL of the Young Men's Christian Association of the United States is organizing a Thrift Campaign, to be inaugurated by what is to be known as Thrift Week, beginning January 17, 1920, in which will be included an "Own Your Own Home" Day.

The Executive Committee has adopted the following resolutions relative to the plan:

RESOLVED: That the National Federation of Construction Industries heartily endorses the plan for a National Thrift Week, set for January, 1920, in which it is intended to bring home to the individual citizens of the United States the value of thrift, or life insurance, of owning one's own home, of making a will, of home economies, as well as the moral obligation of paying one's debts;

AND RESOLVED: That the "Own Your Own Home" Conference Committee of this Federation, which played an important part in the inauguration of the National "Own Your Own Home" Campaign, be authorized to decide, in conjunction with the Y. M. C. A. National Thrift Week Committee, how the Federation can best serve in making the proposed Thrift Week as effective as possible thruout the nation;

AND FURTHER RESOLVED: That the national and local associations thruout this country having to do with construction interests be advised and urged to take similar action of endorsement and helpfulness.

Thursday, January 20, 1920, has been tentatively set aside as the day on which a country-wide attempt will be made to perpetuate the "Own Your Own Home" campaign as one of our national institutions. It is gratifying that the importance of the "Own Your Own Home" campaign, in the origin of which the National Federation of Construction Industries played so prominent a part, should be recognized by chambers of commerce, building and loan associations, local real estate boards, philanthropic and other organizations, many of which have no interest other than that of the public good.

The plan of the Y. M. C. A. to establish an "Own Your Own Home" day, to be observed annually thruout the United States, is printed below.

WHY THE Y. M. C. A. IS INTERESTED IN HELPING INDIVIDUALS TO OWN THEIR OWN HOMES

A man's character, his likes and his tastes may be understood from his selection of companions and environments and from the way he spends his money. In spending money, a man is really trading his life's own energy, for the dollars which he spends represent a portion of it. For what is a man willing to spend a portion of his life? The home, which is in the background of every man's hopes and desires.

A common interest in the nation's wealth and the widest possible distribution of real property are essential to our national well-being. Normal home and community life best assure the health, education, recreation, development and independence of the family.

Tenantry is indeed a poor substitute for the real home, as it leads neither toward independence and responsibility nor toward community association, which is as necessary for

the poise and development of the adult as for that of the child.

The tenant is not only losing the "unearned increment" from the increasing value of land, but much time searching for new quarters and much expense and loss from deterioration of furniture thru moving. He is living in surroundings marred and depreciated by others. By changing from one community to another he is depriving himself and his family of acquaintances and friendships. This brings about an unsettled state of mind and involves non-productiveness and, ultimately, lower wages and earning power.

It has been recognized by the Y. M. C. A. that any program for the physical, mental, spiritual and social development of mankind, to be complete, must include his economic well-being. The ability of an individual to spend wisely means the difference between success and failure, poverty and prosperity, a Christian home and a prison cell. For this reason, in June of 1918, the Y. M. C. A. officially included "Meeting Economic Needs of Men" thru the economic program as a definite part of its program.

The purpose of the Economic Program is to stimulate the individual to fit his income and his abilities into the purpose of a well-rounded life, to enable him to bear his full share of responsibility to his family, employer, society and the nation. In order to emphasize certain definite things which the individual should do to the best interests of his economic life, the following financial creed is recommended:

FINANCIAL CREED

1. Make a Budget. The average individual knows his earning capacity, but does not know his spending capacity. The budget plan gives one a measuring rod for spending. It estimates in advance the amount to be spent for food, clothing, recreation, etc.
2. Keep Record of Expenditures. Mr. John D. Rockefeller said that early in life he made it a rule to keep a record of all money earned and spent. By keeping an honest account of expenditures much unnecessary spending will be eliminated and savings will be secured for emergencies and old age provision.
3. Carry Life Insurance. The man who would do full justice to his family carries life insurance. One can best afford to pay while earning.
4. Have a Bank Account. The bank is a safe place to keep money. It earns money for the depositor by financing industries and local mercantile concerns.
5. Make a Will. Few people do. Even tho a man has little to leave, it is important that it should be easily available and well used upon his death.
6. Own a Home. In most cases a man can arrange to buy a home on the monthly payment plan. Owning a home is not only an excellent way to save money, but it also increases self-respect, provides greater happiness and makes for a more ideal home life.
7. Pay Your Bills Promptly. The Y. M. C. A. recognize-

that a man has moral obligations to pay bills contracted and not to contract any more bills than he can pay.

8. Invest in Government Securities.

9. Share With Others. The investing of money for the happiness of others as well as for yourself, when wisely done, makes a good citizen. Today, with industrial and economic conditions in chaos, it is important that sound economic doctrines be taught to people in all walks of life.

Rather than talking theories, it is proposed to discuss concrete subjects in the financial creed. In the advertising, literature and shop meetings on the subject of a home, it is not only possible to show that owning a home is a good financial investment, but also the underlying principles of property rights.

In order to give the largest emphasis to this program, a National Thrift Week, to be observed annually, is suggested.

"OWN YOUR OWN HOME DAY" PROGRAM FOR LOCAL CITY

1. "Own Your Own Home Day" posters distributed thru-out city.

2. Speakers on "Value of a Home," in all industrial plants, schools, large offices, business colleges, "Y" educational and gym classes, etc.

3. "Own Your Own Home" literature distributed in industries, schools, thru packages delivered by merchants, etc.

4. Newspapers dominated with display advertising, cartoons, news and editorial material on "Own Your Own Home."

5. Provide a reader on economic subjects for the grade schools which includes a chapter on the home.

6. Suggest educational course on economics for high schools.

7. Lantern slides displayed in local theaters on "Own Your Own Home."

8. Motion picture films on "Own Your Own Home" provided local theaters.

NATIONAL PUBLICITY PLANS

1. Presidential proclamation.

2. Proclamation by Governors—fourteen such proclamations were issued by Governors in 1918.

3. Proclamations by Mayors—some fifty such proclamations were issued in 1918.

4. "Own Your Own Home Day" poster for national distribution—two million or more.

5. Articles and cover designs in national magazines.

6. Special advertising in National magazines.

7. Association of National Advertisers to send out bulletin asking their members to feature a cut or trade-mark established in all advertising for the month of January.

8. Conduct national editorial contest.

9. Conduct national cartoon contest.

10. Provide editorial and cartoon service to all daily newspapers.

11. Arrange with American Railway Express to use wagons and bulletin boards all over the country for posters.

12. Provide newspapers thruout country with advertising dummy, showing them how to dominate newspapers with advertising connection with National Thrift Day celebration, paid for by local agents.

13. Provide mica slides for use in local theaters.

14. Put wording "Own Your Own Home Day, January 20," on bottom of all correspondence.

DATE SUGGESTED, JANUARY 20, 1920

In January people have made New Year's resolutions, and are probably in a better frame of mind to consider the future. This gives time enough, if all parties concerned will act

without delay to organize the country very thoroly. It should be kept in mind that January 20 is the date which is to be indelibly stamped on the public mind as "Own Your Own Home Day."

The war has created a very abnormal condition in the shortage of homes. The fact that people have been required to pay exceedingly high rents has made them consider more seriously than ever before the question of owning a home. Ordinarily it requires the expenditure of large sums of money to establish national observance of any particular event. We believe, however, an "Own Your Own Home Day" is possible without large expense if given a hearty backing.

NATIONAL OBSERVANCE OF "OWN YOUR OWN HOME DAY" POSSIBLE, BACKED BY Y. M. C. A. ORGANIZATION

Since 1914 the Y. M. C. A. has been holding city-wide thrift campaigns, more than 700 in number, in different cities. Experience has proven that it is possible to get governors and mayors to issue proclamations. Newspapers have been glad to devote space for editorials and cartoons. Bankers, insurance men, real estate men and others have been glad to cover the industries with shop talks, exhibits and literature.

The Thrift Committee of the Industrial Department, International Committee of Y. M. C. A. will work thru the state committees of the Y. M. C. A. covering 45 states, having 188 traveling secretaries. The "Y" organization now extends to more than 2,200 communities, with 5,188 full-time secretaries at these points.

In each local city it is not an organization superimposed upon the community from the outside, but is composed of the various elements of the city itself. The Board of Directors is composed of the leading men of the city—insurance men, bankers, manufacturers, merchants and real estate men, etc. This board employs a general secretary, who in turn employs specialists to carry on the work of the various departments—industrial, physical, educational, religious, social. It is expected that in many cities a secretary will also give full time following Thrift Week to the Economic Program in which education on owning a home plays a large part.

ADVANTAGE OF PROMOTING SPECIAL DAYS OTHER THAN "OWN YOUR OWN HOME DAY"

By promoting a "National Life Insurance Day" it is possible to secure insurance men to talk the value of a home. The same is true of lawyers, bankers and merchants. Furthermore, by observing a thrift day in the shop, during which is emphasized the saving of time, materials and power, the employer is willing to open his plant to the entire campaign. In the same way "Pay-Up-Day," on which is emphasized the moral obligation of individuals to pay bills contracted, the merchants are won to the campaign and willing to devote large advertising space to it. Instead of detracting from "Own Your Own Home" day, these other days really lend strength and confidence, for it is expected that the Chamber of Commerce, the Rotary Club and some merchants will be willing to run display advertising on the home, signed by their organization, thus getting other organizations behind the "Own Your Own Home" movement.

Correspondence, criticism and suggestions regarding this plan would be welcomed by Arthur M. East, Secretary National Thrift Week Committee, 347 Madison Ave., New York City.



The Jeffersonville (Ind.) Brick Co. has filed final certificate of dissolution.

It has been announced from Sioux Falls, S. D., that a corporation to build homes for working men has been formed there by Mayor Burnside.

“OUR COUNTRY FIRST”

CONFERENCE ADOPTS RESOLUTIONS

Representatives of All Interests From Every Section of the Country Discuss National Problems at Chicago Meeting, September 8 and 9, 1919

THE “OUR COUNTRY FIRST” conference called by the Illinois Manufacturers’ Association, and which met at the Congress Hotel, Chicago, September 8 and 9, proved to be one of the most notable meetings ever held in the United States. There were present nearly one thousand delegates from thirty-six states in the union representing industry, finance, transportation, agriculture and labor.

Men of great prominence in the various interests named above, spoke on the many subjects which are at the present time occupying the center of the stage of public attention. The basic thought that came from each one’s message was that the great need of the present hour was unity of purpose. It was realized that the only way to keep the nation in the van of the world’s progress was for all classes to work together harmoniously, to the common end of making our country first in every sense of the word.

Criticisms were offered freely but so were helpful suggestions which would aid to bring us out of the existing chaos and to restore the industrial pre-eminence of the United States which to some seems in danger of disintegration thru the efforts of self-seeking agitators and the unwarranted attacks of some of the nation’s lawmakers upon the normal legitimate pursuits of business and industry.

The resolutions which were unanimously adopted at this great conference contained in the main, the fundamental principles of the suggestions received from the various speakers thruout the meeting. Practically every topic of national interest is embodied in these resolutions which will be presented to the members of Congress and other government officials by a special committee. The resolutions of national importance which were drafted by the “Our Country First” conference and which were presented in “Manufacturers’ News” are substantially as follows:

“Our Country First” conference unanimously demands that these United States should forthwith return to the letter and spirit of the constitution.

“That great charter of human rights provides that ‘No person shall be deprived of life, liberty or property without due process of law; nor shall private property be taken for public use without just compensation.’

“Our sires were foreigners lured to this country by the inspiration and hope that this was a land where the poor man and his children could acquire, own and control a home or business. The right of private property has made America the greatest among nations; has given to her people a greater number of privately owned and occupied homes, a greater and more equitable distribution of wealth and business enterprise; more happiness and comfort and less of poverty and suffering than any other nation in the world.

“Today, at the end of the most awful war the world has ever known, we find our net national wealth larger than that of all Europe combined; the increase of the cost of living less, and wages and opportunities greater than in any other of the leading nations of the world.

“It is under such conditions that we condemn the frenzied efforts being made by certain radical elements of society to spread the seeds of bolshevism, of ultra-socialism and other like doctrines among the people, all of which are destructive of the right to own and possess property, a right which has existed since the beginning of civilization, and upon which all of our institutions have had their basis and development.

“We earnestly implead our people to consider well this fundamental right, and what its loss would mean to the nation and to its hopeful youth.

U. S. EMPLOYMENT SERVICE OPPOSED

“The United States has become the leading nation of the world by permitting its citizens in their occupations the largest liberty of action consistent with the rights of others. Our future prosperity depends upon the maintenance of that policy. Whatever their necessity in time of war, government activities affecting business should be reduced to the smallest scope at the earliest moment. This conference views with disapproval a governmental policy of licensing interstate commerce business which may subject the existence of business to the whims of political boards. The government should refrain from engaging in any business which can be as well or better operated by private enterprise. Experience has demonstrated that the employment of labor and the furnishing of labor to different localities where it is needed can be best handled thru private or state agencies and we oppose any further appropriations on the part of Congress for maintaining the United States Employment Service.

THE TRANSPORTATION PROBLEM

“We commend the zeal with which committees of Congress are seeking a solution of the transportation problem. The increasing demand for food supplies necessitates the opening of new areas of agricultural production by the extension of transportation systems. Discontinuance of terminal and other railway development has had an important effect upon the general cost of living. Resumption of railway development will tend to stabilize employment of labor, especially if the country should be afflicted with depression, for experience demonstrates that railway building always stimulates and sustains employment and general prosperity. We hail with satisfaction the evident purpose of Congress to reject government ownership of railroads or their management under domination by employes, and to enact instead a law prescribing that rates shall be such as to yield income sufficient to encourage such development.

PRICE-FIXING AND THE FARMER

“Every attempt at price-fixing by governments in this or other countries has failed. If experience of the past is any guide, the field is a dangerous one.

“While we were at war, our people willingly submitted to rules and regulations in the conduct of their private

business that were recognized as autocratic and foreign to our institutions in the days of peace.

"With the war ended, we record ourselves as opposed to any attempt of the government to fix prices in trade between its citizens.

"The great agricultural interests producing the food supply of the nation, and represented at this conference, not only protest against government price fixing generally, but insist that any price fixing to the consumer that does not first give to the farmer his cost of production and a reasonable profit is wickedly unjust and violative of his constitutional rights.

"The farmer also insists that if price-fixing by the government upon food products is engaged in, the price of machinery, clothing, automobiles and all other farm necessities should be correspondingly fixed by the government.

AGRICULTURE MUST BE PROTECTED

"Agriculture is our most important industry. Our national existence depends on surrounding the business of food production and distribution with such conditions that capable men and ample capital shall be attracted to that business in order that the production and economical distribution of an adequate supply of food may be assured for all time to come.

"All laws and regulations relating to food production should be based on the fundamental proposition that returns to capital invested in agriculture should be equal to the returns to capital invested in other industry and business, and that prices of farm products should be sufficient to assure production and to pay wages essential to that end.

COLLECTIVE ACTION BY FARMERS

"The business of the nation has grown from the individual thru the partnership into the corporation. A corporation is but a form of cooperative enterprise and cooperation in industry, therefore, is much more marked than it is in agriculture. To destroy this element of industry—these factors of growth—would weaken the nation itself. We believe the time has come when the millions of farmers, not only in their own interest, but in the interest of consumers, should have the clearly expressed right, by both state and federal laws, to buy, sell and bargain collectively concerning their own products, and we ask for such clarifications of existing statutes that this cooperation will be permitted without fear of prosecution. Where the only offenses charged have been technical and the purpose intimidation or political effect, we deprecate criminal prosecutions directed against farmers and farm organizations over the country.

RELATIONS OF EMPLOYER AND EMPLOYEE

"Section 1. Adequate and efficient production is the basis of social well being and progress for the individual and the community. It is the duty of wage payer, wage earner and the community to exert every reasonable effort for improving and increasing the quantity and quality of production. It is in the public and individual interest to secure productive efficiency thru the stimulus of adequate personal reward. It is essential to recognize that mental effort of management as well as physical labor must be encouraged and properly rewarded and that capital, without which industrial enterprise would be impossible, is equally entitled to receive its adequate compensation, each in accordance with its contributory value.

"Section 2. Both employers and employees must be free as a matter of right to associate themselves, separately or jointly, in a lawful manner, for lawful purposes. Any employer or employee who does not desire so to associate must equally be protected in his fundamental individual right to enter contractual employment relation mutually acceptable and subject to the restrictions of law.

"Section 3. No voluntary combination of employers, employees or both, organized for common purpose and action in respect to the employment relation, should in the public interest be permitted unless it accept legal responsibility for its actions and those of its officers and agents.

"Section 4. The individual worker and his employer should each be free to cease the individual employment relation, provided no contractual obligation is thereby violated. Nevertheless, employee and employer in government and public utility service, where the public interest is paramount, should be restrained by law from instituting by concerted action a strike or lockout, and instead effective machinery should be established in such service for prompt and fair hearing of any requests, differences or disputes touching upon the employment relation and for adequate redress of any grievances proven to be justified. These provisions should be made a part of the written or implied employment contract in such service.

"Section 5. The prevailing high cost of living is the inevitable consequence of such causes as lessened production of necessities of life and decreased productive efficiency, inflation of money, abnormally high wage rates and unduly high prices, continued exercise of war powers by the government and governmental wastefulness of expenditures. Employers and employees, individually and by their duly instituted organizations, should pledge themselves to exert every reasonable effort for the elimination of disturbances tending to interrupt or retard production, and for a speedy return of all industry to a normal basis.

"Section 6. While efficiency in production is thus required by the nation's needs, this conference demands that Congress shall repeal all provisions in its appropriation bills, such as the so-called Tavenner amendment, providing that the appropriations shall not be available for any arsenal or public work wherein efficiency methods are adopted, and it demands that all such provisions be eliminated from subsequent legislation.

DISTRIBUTING THE COST OF THE WAR

"The conference recognizes that for many years to come expenses of government must be larger than they were prior to the war; that larger appropriations will be required for the support of the military and naval establishments, the merchant marine, the air service, and other necessary governmental activities. We recognize that the higher cost of conducting every kind of private business applies in even large degrees to the public business. Taxation is an essential element in the cost of commodities, and therefore adds in considerable degree to the cost of living. Money collected by taxation, whether from investment in trade, in public utilities, in railroads, or in other enterprises serving the public welfare, and is merged in the aggregate mass of the governmental expenditures. So far as possible, all business, agricultural, industrial and commercial, should speedily be freed from the tremendous burden of taxation which was cheerfully borne during the stress of war. As the benefits derived from the winning of the war will be enjoyed by future generations, its cost should be so distributed as to avoid creating an intolerable burden on this generation. Great economies can be effected by the abolition of governmental agencies created for war purposes, but unnecessary in peace. The government should set for the people an example of frugality and economy in its expenditures. Congress should speedily adopt a budget system, and limit its expenditures to the sums which are within its carefully considered sources of income.

STABILIZATION OF THE AMERICAN DOLLAR

"As possessors of 52 per cent. of the gold reserve of the world, and as a creditor nation to the extent of nearly ten

billion dollars, upon which annual payment of interest will be due us, the world's exchange markets with the United States have been dislocated, so that it costs foreign buyers much more than the equivalent of one hundred cents to buy a dollar's worth of American goods. Our prosperity has automatically built up against us an obstacle which has the excluding effect of a protective tariff, not of our making. It tends to retard the exportation of foodstuffs and materials for reconstruction, essential to the relief of European countries, and discourages the foreign trade in American goods essential to the employment of our workmen and the prosperity of our industries. This conference, therefore, urges upon our government the need of using its resources for stabilizing rates of exchange, and upon investors the desirability of giving fair and careful consideration to offerings of foreign investments. We urge American business men to encourage reciprocal buying of foreign goods so far as is consistent with the welfare of American trade.

RADICAL PROPAGANDA CONDENSED

"There is being carried to the school children and college students dangerous un-American teaching, inimical to the constitution of the United States, thru the medium of text books and radical teachers. We therefore condemn

such action, and recommend that the delegates urge their respective organizations to oppose most vigorously such propaganda and combat it with counter efforts.

LABOR INTERNATIONALISM OPPOSED

"This conference disapproves of the establishment of any department under the League of Nations in the interest of any special class of citizens. We refer specially to Section 20, establishing an International Bureau of Labor and to Part 13 of the Treaty of Peace, enunciating some of the purpose thereof.

COMMITTEE TO BE SENT TO WASHINGTON

"The president of the conference is authorized to appoint a committee to go to Washington and urge the resolutions here adopted upon members of Congress and to take such other steps as shall make these resolutions effective.

— TRIBUTE TO MANUFACTURERS' ASSOCIATION

"The delegates in attendance at the conference express to the Illinois Manufacturers' Association and to its able secretary, John M. Glenn, high appreciation of their wisdom in convoking this notable 'Our Country First' conference, and further appreciation of their energy, intelligence and skill in carrying it to a successful conclusion, and their unfailing hospitality."



GENERAL PEACE *in the* BUILDING TRADES *of* NEW YORK *made* POSSIBLE

STABILIZATION OF WAGES, a truce on strikes and general peace in the building trades of New York was made possible over the week-end, according to the Dow Service Daily Building Reports of September 15.

Governor Alfred E. Smith on Saturday invited employers, workers and public spirited men and women to a conference at Albany, September 16, at noon to prepare a program and appoint a State Labor Board of both employers and employees in an effort to stop strikes and lockouts and to keep the wheels of industry moving. The Building Trades Employers' Association has called a conference of all the building trades employees to ascertain if there is a way to prevent a full lockout of all the building trades, the date to be fixed to meet the convenience of the employees, and the employees have sent out to all the building trades unions a proposition looking toward the stabilization of wages and a truce on strikes without formal consideration of the matter in issue first.

PEAK REACHED IN BASIC BUILDING MATERIALS

It was incidentally generally conceded by practically every building material department that the peak had been reached for the moment in all basic building materials so far as present supplies were concerned and that future price advances in building materials would be governed entirely by the ability of the President to bring about a reduction in the cost of living so as to keep wages to both skilled and unskilled labor stable at centers of building material manufacture as well as at points of building construction. Present building material prices are based upon wage scales either now in force or to become operative before the labor conference meets in Washington next month. They will not, under any circumstance, however, go lower than present levels either this year or next year, because stocks in hand today will largely enter into next year's building work. What next year's producing costs will be cannot at this time

be foretold, but it is certain that they will reflect the new wage scales accorded to labor under the agreements accepted in the final adjustment of present labor disputes or the adjustments that will result from the failure of the administration to cut the cost of living.

All the building trades unions will receive in the mail today the following referendum, the replies to which will be tabulated October 15:

"1—The minimum wages of all organizations of mechanics in this board shall be not less than \$8 for the recognized working day of eight hours, and the minimum wages of all organizations of helpers and laborers in this board shall not be less than \$6 for the recognized working day of eight hours, commencing on January 1, 1920.

"2—On May 1, 1920, if the cost of living has not been lowered, a further increase in wages shall be determined by the Board of Business Agents of the Building Trades of Manhattan and vicinity.

"3—All agreements between the unions in the Board and Employers, or Employers' Associations, must expire on June 30, 1921, except in case of upholsterers, which shall be September 1, 1921. Any organization contemplating changes in their agreement shall submit to the Board of Business Agents of the Building Trades of Manhattan and vicinity such changes at least four months prior to expiration of the agreement they are working under.

"4—Every agreement entered into by unions of said board must contain a clause stating that it shall not be considered a violation of the agreement to refuse to work with men not recognized by the said Board of Business Agents of the Building Trades of Manhattan and vicinity.

"5—No strike, which will cause a general strike, shall be ordered against an employer who has an agreement with any union in the Board of Business Agents of the Building Trades of Manhattan and vicinity until the matter in dispute is first submitted to the said Board of Business Agents."

Powerful factors, financial, political, philanthropic and those affecting both employes and employers have been at work within the last week to bring about a working arrangement between the employers and the employes in the building trades of New York and vicinity before a complete close-down of all structural activity, and, incidentally, enforced close-down of manufacturing establishments supplying this market, should the lock-out be prolonged for any length of time, should come to pass by the closing of the building material supply yards of New York and vicinity. The mason material dealers on Friday decided to defer action regarding the closing of their yards until the new machinery of conciliation would be placed in operation this week and next. This action probably prevented the complete cessation of all building work pending negotiation.

PUBLIC HAS VOICE IN THE MATTER

There is a sentiment here and there among employers of building artisans that this is a private affair between the men and the bosses and that outside influences are not desired. Union officials declare that they are indifferent on the subject, that they are finding work for their men in the West and down East. But the public, facing winter without adequate shelter; business, daily feeling the restrictions to enforced expansion; and investors, hourly feeling the pressure of interest rates on investment in building construction that has been idle for a long period of time, said on Saturday that they believed they had a voice in the matter and that if the warring factions could not come to terms amicably, then they had a right to expect the state to step in. The result is the action of the governor, who has called a meeting of employers and employes at Albany the day before the common brick manufacturers of New York, New Jersey, Connecticut and Massachusetts meet in the same city and in the shadow of the state house to discuss some of their problems arising from the conditions now obtaining in centers of consumption of their product.



Bureau of Mines to Dedicate New Laboratories

An elaborate program has been arranged by the Bureau of Mines, Department of Interior, in cooperation with the Pittsburgh Chamber of Commerce, for the dedication of its new million-dollar laboratories at Pittsburgh, Pa. Appropriate national ceremonies will be held on September 29, 30 and October 1.

The work of the Bureau of Mines covers the various ramifications into the safety and efficiency of the mineral industries, the prevention of waste in the natural resources and their products and other improvements in refining and manufacturing processes.

The Ceramic Experiment Station at Columbus, Ohio, of which R. T. Stull is superintendent, is one of the departments of this bureau.



Decreased Output of Brick and Tile in New Jersey in 1918 Due to War

The State Department of Conservation and Development, Trenton, N. J., has issued a statement covering brick and tile production in the state during the year past, showing a decrease in dollar valuation of \$1,795,407 as compared with the output for the previous year, or 1917. The report has been compiled in cooperation with the United States Geological Survey, and shows a total production of these materials in the state in 1918, valued at \$8,197,982.

It is pointed out that the falling off was due largely to a decreased demand for building commodities, and partly through the fuel restrictions imposed on the clayworking industries

on April 13, 1918, by the fuel administration; in some lines, the percentage of fuel permitted was only 50 per cent. of the average consumption for the three previous years.

Under the latest rating, based on 1916 statistics, New Jersey stands fourth in the Union in the brick and tile industries. Middlesex County in the state had the largest production in 1918. The total value of \$4,971,423 for brick sold was the largest in the history of the state industry, exceeding the total of the previous year (1917) by \$55,264. This was due to the increased value of fire brick used by the industries stimulated by the war. In 1918, a total of 40,462 fire brick sold for \$2,907,993, as against an amount of \$2,290,899 for 42,065 fire brick in the previous year.

As to be expected, common brick suffered a decrease owing to the war. In 1918, 152,783,000 brick sold for \$1,672,832; this was 53,011,000 less brick and \$170,414 less in value than in the preceding year. Other brick, including face brick, fancy and enameled brick sold for \$290,598 in 1918.

Suspension of building operations, it is pointed out, also had its effect on demand for tile, architectural terra cotta, fireproofing and hollow tile blocks and miscellaneous burned clay building materials. The aggregate sales for the year amounted to \$3,326,559, which was less by a total of \$1,850,671 than in 1917.

Fireproofing and hollow blocks totaled \$1,573,829, a decrease of \$593,829 as compared with the preceding year; architectural terra cotta sold for \$387,597, a decrease of \$934,605, as compared with 1917. Tile, other than drain tile, was valued at \$872,879, or \$429,081 less than in the previous year. Drain tile, sewer pipe, stove lining and other products of like nature had a total valuation of \$492,254 in 1918.



Brick Men to Investigate Paving Awards

Investigation of activities, or rather lack of activities, on the part of public interests, in connection with paving awards in certain states of the Middle West, may be urged by paving brick interests as a result of developments during the last few months in connection with highway improvements in those states. It is the belief of those in a position to know that the support of industries located in certain states and communities, by the people who benefit from these interests, is only fair. For this reason the people of Ohio cannot reconcile the treatment that the brick manufacturers are receiving, for example, at the hands of the state highway commission of Indiana as representing sound business policy.

As a parallel, the Ohio State Highway Commission has awarded approximately the same number of square yards of brick road improvement as it has for concrete highway development. The amount of brick highway work let so far during 1919 is about 800,000 square yards. This does not include many miles of brick road improvement let under the jurisdiction of local boards.

This stands out as an illumining contrast with the action of the Indiana board, it is claimed, which seemingly has discriminated against the use of brick, for up to the present time not a single yard of brick pavement improvement has been awarded, paving brick interests allege.

As a means of testing this situation, a suit has been filed in Clay County, Indiana, seeking to enjoin the building of concrete roads, in a county where invested capital and clay products production not only are of great importance to the state, but to that community are almost a sole industrial dependence.

Another phase of this situation that has come to the attention of paving brick interests, is that in Indianapolis specifications for brick road have been so changed that contractors must bid so high on brick that they do not get the work

LUBRICATION PRINCIPLES

Thru a Knowledge of How to Save Power, a Power Plant Operator May Save, Many Times Over Each Year, the Cost of Lubricants—An Accurate Knowledge of Lubricants and Lubrication is Also Vitally Important—Mr. June Gives Some Valuable “Tips” on These Matters Herein

By Robert June, M. E.

OF VITAL IMPORTANCE to the economical operation of the power plant is an accurate knowledge on the part of power plant operators and engineers, of lubricants and lubrication. This is true, because even in a plant where the lubricants for each particular service are the ones best adapted to that service, losses of power, caused by friction, may range from 5 to 30 per cent.

With improper lubricants, the losses due to friction may run much higher, and to those losses may be added the losses due to depreciation of equipment, caused by wear on bearings, guides, cylinders, etc.

As a general proposition, losses due to friction will be found to vary from 8 per cent., in central stations, where energy is simply produced but not utilized, to 25 per cent., in plants where manufacturing processes are carried on, such as textile, refrigeration, iron and steel, brick and clay, paper, etc. Reducing this power loss caused by friction, by 1/10 will generally pay for all lubricants used in the course of a year. Hence we are concerned, not with the proposition of saving oil, but with the problem of saving power; for by saving power we may be enabled to save the cost of our lubricants several times over each year.

This is an aspect of the problem of lubrication that is, unfortunately, not generally sufficiently appreciated by the plant manager and superintendent or by the operating engineer. The latter know that they get better results with certain lubricants than others but the value of these results in dollars and cents is almost never placed before them so that they can vividly realize their importance.

FRICTION AND LUBRICATION

The function of a lubricant is to reduce friction, which may be defined as the resistance or binding action produced when one body is drawn over another. Friction will vary with the character of the materials, the smoothness of the surfaces, and the pressure exerted to force them together.

Figure 1 illustrates the condition existing when bodies of different degrees of smoothness are drawn over each other. It is evident that as the roughness of the surface increases there is a greater tendency for the projections to lock together and that greater force will be required to draw the bodies with rougher surfaces over each other than to draw those with smoother surfaces.

This clearly illustrates the importance of giving bearings, guides and cylinders, the smoothest possible finish. Unfortunately, we can never obtain complete smoothness of surface with any metal and must, therefore, content ourselves with obtaining the smoothest surface possible with the particular materials employed.

The purpose of lubrication is to interpose a film of oil between the surfaces, thus forcing them apart so that the actual

contact of metal with metal is avoided, and we have only to deal with the fluid friction of the lubricant.

The expression “fluid friction of the lubricant” may be taken as referring to the resistance of the oil to the force tending to pull its particles apart. This can best be understood by referring to Figure II, wherein an attempt has been made to show the condition of the lubricant in a bearing in action. It will be seen that the oil which is in closest contact with the shaft moves at a much faster rate than that which is in closest contact with the bearing. In other words, we have what may be termed a number of layers of oil between the shaft and the bearing, each moving at a progressively faster rate, depending upon its proximity to the shaft.

It is this condition of fluid friction set up in the oil which makes our choice of a proper lubricant extremely important. The reason for this is that operating conditions vary widely, depending upon the pressure tending to force the bodies together, the temperatures existing at the point at which the lubricant must be used, the speed of one moving body with relation to the other, etc. Obviously, no one lubricant can be expected to meet all conditions of services, so we must find the lubricant best adapted for each particular service.

CHARACTERISTICS OF A GOOD LUBRICANT

A good lubricant is that which for the particular service under consideration possesses the following characteristics:

1. It should prevent the surfaces from coming into contact under conditions of maximum pressure, and ability to do this is a function of viscosity, or, as it is sometimes called, “body” of the oil.
2. It should absorb and carry away heat.
3. It should have a low co-efficient of friction.
4. It should be of the lowest viscosity (i. e., greatest fluidity) consistent with the work required.
5. Greases.
6. Its temperature of vaporization (flash point) should be high, but its freezing point low.
7. It should be free from acids.

CHARACTERISTICS OF VARIOUS LUBRICANTS

Having outlined the qualifications of a good lubricant for any particular service, let us now examine the characteristics of the various lubricants available to see the services for which they are adapted. Lubricants may be divided as follows:

1. Vegetable oils.
2. Animal fats.
3. Mineral oils.
4. Solid lubricants.
5. Greases.

Examining each of these in turn, we find that they possess the following characteristics:

Vegetable Oils: Vegetable oils consist principally of linseed, castor, rapeseed, resin, cotton seed, etc. These do not, in themselves, possess lubricating properties of any great practical value since they oxidize at comparatively low tem-

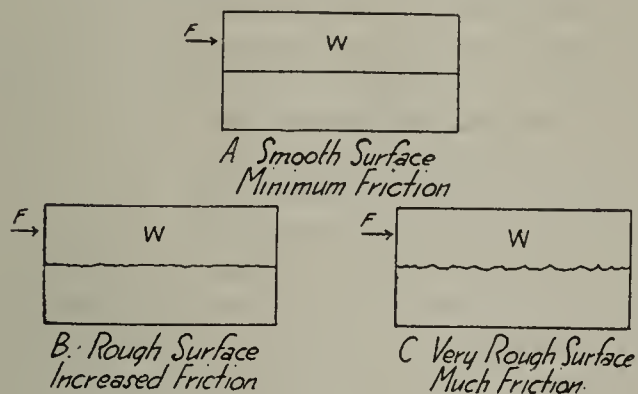


FIG. 1.

peratures and are apt to become thick and gummy after a short time. These oils are therefore of very poor cold test, congealing at a comparatively high temperature, thus making them inconvenient for use in cold weather. The principal use of these oils for lubricating purposes is therefore confined to compounding with mineral oils for certain purposes.

Animal Fats: Animal oils in general use are tallow, neat's foot oil, lard, sperm oil, wool grease, fish oils, etc. Individually, these oils possess the same objectionable features as vegetable oils. They are, therefore, seldom used in a pure state, but are, on the contrary, frequently compounded with mineral oils. The reason for this compounding, when done, is that the animal oils in general have better lubricating qualities than pure mineral oils of the same viscosity, or body.

In cylinder lubrication, especially in the presence of moisture caused by steam, the addition of 2 to 5 per cent. of tallow seems to increase the lubricating effects. When used in these proportions, the bad effects from the decomposition of the tallow, which may set free acids which attack the metal, and the bad effects of gumming or oxidation, are not so great as to overbalance the advantages of better lubrication.

Mineral Oils: Mineral oils have many advantages as lubricants over animal or vegetable oils:

1. In their cheapness.
2. Being of non-organic origin, they are of a more stable chemical composition and do not tend so readily to change their condition by becoming rancid, thick, or gummy, by exposure to the air, and they have no corrosive action on metals.
3. By what is known as fractional distillation, mineral oils can be separated into a great many different grades, from the lightest spindle oils to the dense, heavy cylinder oils.
4. They are of lower cold test, and not so liable to spontaneous combustion as the animal fats.
5. They present a wider range of lubricating properties than those derived from mineral or vegetable sources—the thinnest being more fluid than sperm; and the thickest more viscous than fats and tallows.

Mineral oils may be classified as follows:

1. Distilled oils, which are produced by distillation from crude petroleum and are so treated by various processes in which alkalies and acids are employed as to appear in the finished product as transparent fluids of extremely stable composition.
2. Natural oils, which are prepared crude petroleum, from which grit, suspended and tarry impurities have been removed. They are usually dark, opaque and rich in lubricating properties.

3. Reduced oils, or, as they are sometimes termed, heavy, natural oils, from which the lighter hydro-carbons have been evaporated, and from which the tarry residue has been removed by filtration.

Solid Lubricants: Mica, soapstone and dry graphite are the principal solid lubricants. When used, they are mixed with grease or oils. Their principal use is to be found at points where great weights have to be carried on small areas and is usually confined to the low speeds. The co-efficient of friction of solid lubricants is high, and they are, therefore, not particularly economical. Better results can usually be obtained by the use of larger bearing surfaces, but when design does not permit of these large surfaces, there is a real field for their use. Under certain conditions of speed, solid lubricants will sustain pressures under which no liquid would work.

Graphite exists in two forms—flaked and amorphous. Crystalline graphite or flake graphite is dense and compact, and is not easily reduced by crushing between the fingers, so that the individual particles maintain their size. "Amorphous" graphite, under pressure, continues to be reduced in size until the particles are no longer evident to the touch. Flake graphite is the better lubricant, because it has good wearing qualities and adheres to metallic surfaces with which it comes into contact. The value of flake graphite as a lubricant lies in its property of filling any irregularities that exist in a bearing surface, thus reducing the roughness of the surface and producing a better surface for lubrication with oil or grease.

Graphite is of value as a lubricant for steam engine cylinders, provided it is used in great moderation and not fed in excess. The entire value of graphite as lubricant is lost if an excessive amount is used.

When the valve seats and cylinder walls of an engine are badly cut or scored, the addition of a little graphite, several teaspoonfuls, mixed with the cylinder oil, will greatly aid in smoothing up the bearing surfaces.

For steam engine cylinders using superheated steam, flake graphite is of great value. It aids in filling up the irregularities of the cylinder wall surfaces so that the cylinder oil, which is greatly reduced in viscosity by the high temperatures found in these cylinders, will have the best possible surface conditions to work on.

In order to obtain a clear idea of the value of graphite as a lubricant, the engineer must appreciate the fact that in order to be efficient graphite must identify itself with the

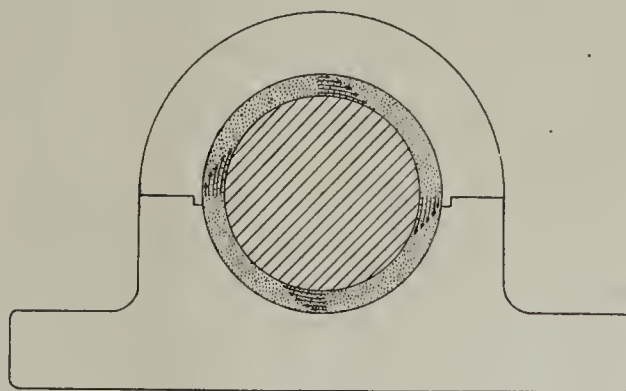


FIG. 2.

Illustrating the relative speeds of the various layers of oil surrounding shaft in bearing

metallic surfaces to be lubricated. Its function is to fill up the pores and depressions in the surfaces, giving them a smooth polished finish. Lubricating oil must be introduced between the rubbing surfaces so as to produce a film which will be more efficient in its results because of the reduced frictional resistance to be overcome, due to graphite surfaces.

The specific gravity of graphite is 1.81 and, therefore, is greater than that of oil, and for this reason it will settle out of oil on standing. It is not possible to suspend permanently graphite in oil. A mixture of oil and graphite should never be put in an oil cup or sight-feed lubricator, as the graphite will soon clog the feed passages.

For engine bearings a heaping teaspoonful of graphite to a pint of oil is sufficient. About 4 per cent. by weight of graphite is the average good practice when mixed with oils and greases, and gives good results when applied at reasonably long intervals. Graphite should never be used on bearings supplied with forced continuous lubrication.

Lubricating Greases: Petroleum cup greases consist of lime-soaps, mineral greases, and resin oils. Soap gives the grease melting-point and body. Greases are excellent lubricants when properly used, but they have, however, a very narrow range of service and they should not be called upon to perform the function of lubrication under conditions to which they are not suited.

The use of any solidified lubricant places a drag or friction load on the machine it is used upon. The chief advantage of grease as a lubricant lies in its cleanliness and in its property to "stay put." In bearings revolving at a slow speed, where it would be difficult to maintain a film of lubricant, grease may be used to advantage.

For crank-pin bearings of high speed engines, grease will give satisfactory results. In the case of the low speed bearings mentioned above, grease is an efficient lubricant, because, due to its adhesiveness it will maintain a layer of lubricant when the machine is at rest, and thus reduce the starting friction when the machine is placed in operation.

TESTING LUBRICANTS

While it is possible to lay out quite elaborate specifications for lubricants, covering every type of service, the fact nevertheless remains that these specifications are, after all, only a starting point.

After the particular lubricant has been chosen, by specification, it remains to test it out under actual working conditions and then to try other lubricants whose general nature is such as to lead the engineer to believe that success might attend their use. Only by comparing the performance of a number of lubricants under actual working conditions can the best lubricant for the particular service under consideration be chosen. Our first step, however, is to choose our several lubricants, which we expect to test out, intelligently. In order to do this it may be well to review the tests and specifications used by large consumers in the purchase of lubricants.

The test of an oil consists of three parts—chemical, physical and practical.

CHEMICAL TESTS OF LUBRICATING OILS

To pass the chemical test of the Navy Department "all oils should be natural in reaction and should not show the presence of moisture, matter insoluble in petroleum ether (hard asphalt), matter insoluble in ether alcohol (soft asphalt), free sulphur, charring or wax-like constituents, naphthenic acids, sulphonated oils, soap, resin or tarry constituents, the presence of which indicates adulteration or lack of proper refining. Except in oil for engines without forced lubrication, no traces of fixed oils (animal or vegetable fats) should be found.

"In lubricating oil for main engines without forced lubrication, approved fixed oils, such as rapeseed, olive, tallow, lard and neats foot oil, may be used. When the foregoing fixed oils are used, they must be well refined with alkalis, unadulterated, containing minimum of free fatty acids with no moisture or gumming constituents. Olive oil should not

have a high specific gravity. If satisfactory emulsifying results can be obtained with straight mineral oils on engines without forced lubrication, they may be submitted for service test."

While the small plant owner is not usually in a position to have various tests for oils made in his plant, he can usually have them made by a commercial laboratory at a cost, which in view of the possible savings to be effected, is well worth the time and expense involved. Large plants, of course, often possess laboratories and are in a position to make the tests themselves.

The procedure may be outlined as follows:

Moisture Test: Wet the walls of a test tube with the oil under investigation, then put three or four c.c. of the oil in a tube and place in a bath of liquid paraffin which should be brought up to a temperature of 300 deg. Fahr. If the oil contains water, emulsions will form on the walls, and foaming and sputtering will be noted.

Sulphur Test: Take a small piece of metallic sodium the size of the little finger nail, boil it in 50 c.c. of the oil in a test tube for 30 minutes. At the end of this time, add an equal amount of water and again place over the burner flame until the sodium is dissolved. After the sodium has disappeared, pour off the water, and pour in one per cent. solution of sodium nitroprusside. If the mixture turns violet color, the oil contains sulphur.

Tests for Acid Alkalies: Pour 25 c.c. of oil and twice as much of distilled water into the test tube; boil for several minutes, dividing the mixture into two portions; add methyl-orange to determine acids to one portion, and to the other, add phenolphthalein for the determination of alkalis. The formation of emulsions in either test tube will indicate the presence of acid or alkali, as the case may be. Acids cause corrosion and should be religiously avoided.

Tests for Matter Insoluble in Ether-Alcohol: Place 14 c.c. of ether-alcohol (which contains 8 parts of ether and 6 parts of alcohol), and 11 c.c. of oil in the test tube—shake thoroly for a minute or two—then allow the two to stand for twelve hours. At the end of this time, if there is any precipitation at the bottom of the tube, it will be asphalt. Even a trace of asphalt makes a lubricant undesirable, since it causes scoring of journals and clogging of oil lines.

Tests for Matter Insoluble in High Grade Gasoline: Filter several times 300 c.c. of 86 to 88 Baumé gasoline. Place in an absolutely clean or dust-proof glass receptacle. Sprinkle 2 c.c. of oil into the gasoline and allow to stand for 12 hours. If there is any precipitate at the end of that time, it will consist of soft asphalt or carbon particles, and even a slight trace would make the oil extremely undesirable.

Test for Tarry or Suspended Matter: This test is carried out in the same manner as the previous one using, however, 95 c.c. of gasoline and 5 c.c. of oil. The receptacle may be examined for precipitate at the end of a half hour.

Test to Determine Mineral or Vegetable Oils: Take small piece of metallic sodium and bring to a boil in 10 c.c. of oil. The presence of animal or vegetable oils will be indicated if the mixture becomes gelatinized or semi-solid.

Test for Presence of Undesirable Carbon or Hydro-Carbon: This test is made by simply heating a small quantity of oil in test tube to a boil, and then comparing the color of the heated oil with that of unheated. If there is any discoloration in the oil, it indicates the presence of undesirable constituents.

Gumming Tests: This test indicates the extent to which the oil has been refined, and will, therefore, serve as a guide to indicate the extent to which oil may be expected

to oxidize or gum when in use. This test is undoubtedly of great value, and it should always be made when opportunity is afforded. It consists simply of mixing a small quantity of oil in the test tube with an equal quantity of nitro-sulphuric acid, and if the oil has been properly refined, no change will be noted, but if the oil has been poorly refined, the fact will become evident by the simple separation of material of dark color. This separation is the result of oxidation of tarry matter in the lubricant.

It has been found that the result obtained by the gumming tests compare almost exactly in results with what is known as the carbon residue test, which is made by distilling the oil to dryness in the test tube. This carbon residue test has been found of great assistance in choosing a satisfactory cylinder lubricant for gas engines, as the presence of carbon always and invariably means trouble in gas engine cylinders.

Tests which have just been outlined are easily within range of even the small plant operator, and the writer believes that the investigation of the characteristics of the oils being used is well worth the attention of operators in both large and small plants.

This is particularly true, because of the fact that the presence of undesirable matter in the oils may mean very heavy costs for repairs to equipment, and may even cause a shut-down of the plant at critical moments.

Next month we will take up physical tests of lubricating oils, and will then discuss the characteristics of oils for various services.

* * *

Ceramics at School of Industrial Arts

The ceramic department of the School of Industrial Arts, Trenton, N. J., has arranged its program of instruction for the forthcoming winter term, with classes to begin within the next few weeks. Two branches of study have been arranged covering applied ceramics and ceramic engineering, with the use of a fully equipped shop, laboratory and kiln room. The department will be under the direction of Professor George H. Brown, director, department of ceramics, Rutgers College, who will handle the instruction in the ceramic engineering course. This branch will include the following topics: 1—Physical Testing of Clays and Bodies; (a) Clays—measurement of plasticity, working properties, drying and burning behavior; purification of clays; (b) Bodies—composition and preparation; physical properties; firing range, color, etc.; preparation of casting slips. 2—Glazes; (a) Ceramic calculations; (b) Types of glazes; physical and chemical properties; preparation; (c) Application to bodies. 3—Refractories; (a) Saggers—Selection of clays; preparation of mixtures; physical properties; (b) Fire brick and special refractories—Physical properties; testing; selection. 4—Dryers and Kilns; (a) Dryers—Types of dryers; operation; efficiency; (b) Kilns—Types of kilns; construction; operation; efficiency; (c) Burning—Combustion of fuels; pyrometry and kiln control.

The instruction in the applied ceramic course will be under the direction of James W. Moncrieff, a graduate of the Department of Ceramic Engineering, University of Illinois. It will include the following phases of work: 1—Ceramic Raw Materials; (a) Clays—origin; occurrence; physical properties; preparation for the market; (b) Flints, feldspars, etc.—Physical properties; preparation; uses. 2—Bodies and Glazes; (a) Pottery Bodies—Composition and methods of preparation; formation of wares, including pressing, casting, throwing and dust pressing; (b) Saggers—Composition and manufacture; (c) Glazes—Calculation and composition; preparation and application. 3—Burning; (a) Construction of

kilns and dryers; (b) Combustion of fuels; (c) Temperature measurement and kiln control.

* * *

Brick Used in Large Round Pillars

Brick has found many novel uses and instances of this nature can be noted each day. However, it is not very often that one runs across a case where it has been used for such purposes as illustrated in the accompanying picture.



Illustrating the Use of Face Brick in the Construction of Large Round Columns for Building Entrance.

The view here shown was taken at the National Exhibition Grounds at Ottawa, Ont., Canada. It shows the front entrance to the General Purpose Building which is a very large structure faced with a multi-colored, rough texture brick. The unusual feature of this building is the four round columns constructed of the same brick as used in facing the building. These pillars are perfect in construction and present a very attractive appearance. One wonders why there is not more construction of this nature.

* * *

Save \$2,000 By Using Old Pavers

St. Louis brick manufacturers were amused at a humorous situation which recently arose in East St. Louis. Rev. Thomas S. Brannan, pastor of St. Joseph's Church, announced this plan to his congregation which will save his parish \$2,000:

"The city council has decided to remake St. Louis Avenue. Many of the members of this congregation own property on that street. I want each one of you to collect all the brick taken up from the street on which your property abuts. Bring the brick here and we will use them in building a two-room addition to our school. The law gives you the possession of those brick and you will be within the law if you take them. You will be ridding the city of the trouble of moving the brick away and providing your parish with brick which are needed. This school improvement will cost \$2,000. If you bring the brick it will be so greatly reduced that it will be scarcely noticed. If any of you have scruples about taking these brick kindly notify me and I will do that part of the work for you or have it done."

Father Brannan, one year ago, completed the erection of one of the handsomest churches in southern Illinois. He did both mental and manual labor in the construction of the building.

* * *

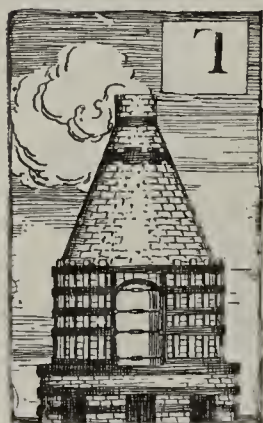
Sacramento shows practically a doubling of permits in August compared with the month previous and Oakland passed the \$900,000 mark in August. Portland, Ore., shows a \$200,000 increase over July.

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products Such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

WHERE REAL ART IN POTTERY PRODUCTION STANDS FIRST



HERE ARE POTTERIES and there are potteries—but there is only one Fulper. This plant, located at Flemington, N. J., is well entitled to the term, "America's Most Noteworthy Pottery," a slogan, distinctly appropriate, which has been adopted to individualize and identify the establishment. The plant production is unique, exquisite and distinctive; it is pottery that shows the highest type of modern ceramic art, its fame is national and international, and it exemplifies in a striking manner what can be done with fine native clays. The specimens manufactured at the Fulper Pottery bear testimony to the high status of American craftsmanship in this line.

This pottery has been in operation well over a century, or to be exact, 114 years, having been founded in 1805, and in the same location where it now stands. Parts of the original building are still in use, sufficiently remodeled and modernized for present-day utility and service. A view



View of the Rear Section of the Fulper Pottery, Part of Which Was Constructed Over a Century Ago.

of the rear section of the plant is shown in the accompanying picture.

A little sidelight on the history of this notable plant is

interesting. William H. Fulper, secretary and treasurer of the company, and present head of the business, is the third generation. His grandfather was "loaned out" as an apprentice to Theodore Hill, founder of the business, and later became directly associated with the plant; he was succeeded by his son, who in turn gave way to the present Mr. Fulper, as noted. The name of Fulper has been identified with pottery production in this locality for over 100 years, with the old Hill plant assuming this name individually about 1840.

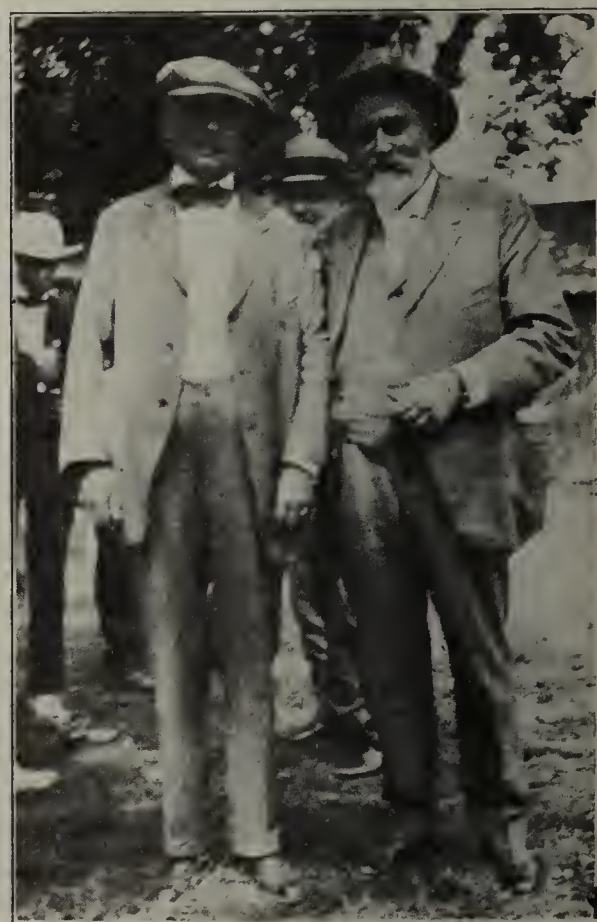
Early output was given over to general pottery and stone-

ware, and this was followed down from generation to generation. A few years before the war, the plant commenced to develop the finer specimens of pottery manufacture thru the extensive studies and experiments of Mr. Fulper, until today almost the entire production is given over to this class of ware. The big future of the business lies in this direction, and intensive work is under way to produce the very finest that can be accomplished in this line.

The plant is replete in every particular. It comprises raw clay department, mixing and molding departments, and other branches leading to finished manufacture, with boiler-room for works operation, stockrooms, packing sheds, shipping department and the like. There are four 18-ft. down-draft kilns, two decorating kilns and one kiln for experimental work. Employment is now given to about 75 men and women; many of these are skilled operatives, risen from the ranks and understanding thoroly what is required for desired production, and others, now learning the individual features of Fulper methods for more extended service as time goes on.

POTTERY GLAZES

The big features of the distinctiveness of Fulper pottery, as the case with other high-grade art pottery, is found in



Chas. Howell Cook, on the Left; Chas. A. Bloomfield, on the Right, and Warren A. King in the Center Peering Over Their Shoulders.

the glazes and firing. Pottery produced at the plant is subjected to an intense heat of at least 2260 deg. Fahr., the body of the ware and the glazes maturing in the same fire. The glazes are brought out in an unusual way, giving color tones and effects which cannot be obtained in the ordinary fashion of low-fired glazes on hard-fired bisquit, or unglazed burned pottery. The coloring has exceptional depth and beauty, with strong, rich color shades.

Glazes now produced in high perfection at the plant include: (1) Mirrored glaze, or finish of highly polished reflection; (2) Flambe glazes, closely allied with those of mirrored style; (3) Lustre glaze, or finish of iridescent character; (4) Crystal glazes, or finish of many varied tones—mirrored, clear crystal, surface crystal, and still others with surface carrying the effect of galvanized iron; (5) Matt glazes, or surface texture of soft, velvety tone, and in many degrees of color smoothness; (6) Wistaria glazes, or finish with pastelle texture and color harmony ranging thru all wistaria shades, effecting fine combinations of surfaces in distinct individuality, and particularly so in the matter of colors and markings when employed as a ground, or basis for mirrored glazes; and (7) Powdered glazes, or actual reproductions of ancient Chinese surfacing in powdered fold, powdered blue and powdered brown, used alone or in combination with other finish.

CHARACTER OF WARE

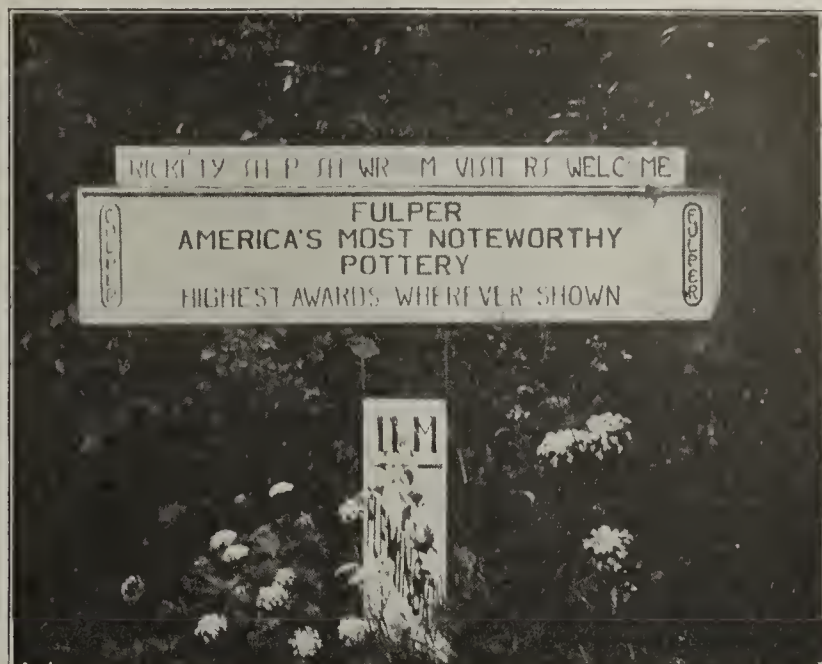
No modern pottery is copied or imitated at the Fulper works; all shapes and styles have been developed right at the studio at the plant, with majority of designs intended for practical use. The decorating is done entirely by kiln action, the ware being left to this feature of production for such treatment as may be possible; this results in each piece being individual and distinctive.



Warren A. King, Wm. H. Fulper, Chas. A. Bloomfield and Others Snapped in Front of the Fulper Pottery.

The innumerable colors and combinations of the glazes, as arranged, allows a remarkable choice of color finish and character. The possibilities are unlimited and the range

permits a selection to suit any taste. Many glazes used at the plant, it is said, are actual rediscoveries of ancient Chinese glazes now generally lost art. Thus the pottery



Inviting the Automobilist to Visit the Display Section at the Fulper Pottery Plant.

can often be compared with old Chinese porcelains in distinct points of merit.

All materials used for manufacture are of native origin, with the clays from some of the well-known beds of New Jersey. The bodies of the wares are, for the most part, formed of four different New Jersey clays. A large, complete stock of raw material is kept on hand in order that desired uniformity in the clays can be obtained, and with such successful attainments as now derived, there is but little experimenting with new clays for body formation.

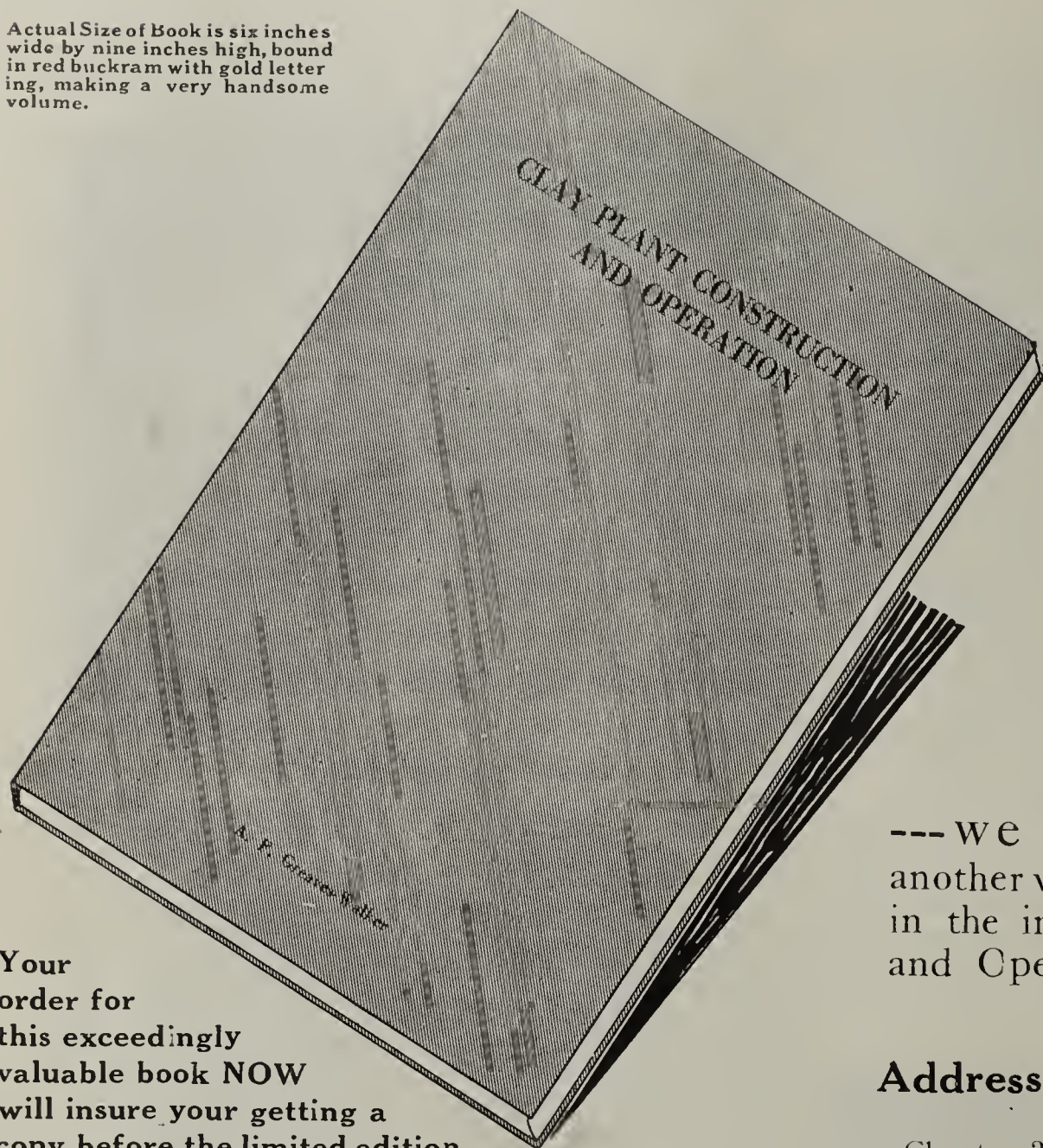
SHOW ROOMS

One of the most interesting spots at the Fulper works is the show room, arranged on the second floor in one of the older buildings, above the offices. The theme of the old antique is here carried out to a nicety—old-fashioned, rustic beamed ceilings, small windows, fine specimens of rare antique furniture, all lend charm to the environment and allow the display of the ware to best possible advantage.

The pieces of ware on display and for sale delight the eye of the visitor; almost everything that might be sought in the art pottery line is available, and at prices to suit almost any purse. There is an endless variety of such articles as vases, flower flagons, coasters, urn vases, jars, book ends or blocks, flower bowls, Roman lamps or incense burners, small pedestals, and so on. The prices range from about one dollar upwards, some special pieces being marked forty and fifty dollars, and more. These latter are exclusive, individual articles, that never are or can be duplicated. The regular ware, as cataloged, is sold under the trade name of "Vasekraft" pottery.

An idea of the exceptional character of Fulper pottery is emphasized in the fact that a collective exhibit of this ware received the highest possible award, the Medal of Honor, at the Panama Pacific International Exposition, San Francisco, 1915, and this over all potteries, foreign and domestic. In addition, nine other medals were accorded at this World's Fair. Wherever shown, at other important expositions or gatherings, the highest honors have been received. This pottery is also to be found in some of the finest shops on the European continent, as well as in Australia, Japan, cities of Central and South America, and other foreign points. And again, specimens can be

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"Clay Plant Construction and Operation," as has already been stated, is a hand-book on the clay products manufacturing industry. Its author, because of his large experience in Kentucky, Utah, Ohio, Alabama, Maryland, and also in Canada, in the manufacture of many different clay products, has been enabled to write a book of this character.

He starts with the clay property, devoid of buildings or any developments whatsoever, and shows just how such a property should be properly tested to determine its value and availability. Here is where many prospective clay products manufacturers fail and where millions of dollars have been lost and wasted because of unintelligent and improper testing of the property. The first chapter of the book is alone worth the price of the entire volume.

Chapter 2 deals with "Hollow Ware Dies", a subject upon which there has not been much written. Detailed drawings are given, showing proper construction of hollow ware dies and methods of adjustment for efficient operation.

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Chapter 3 also deals with this subject, being entitled, "Factors Important to Dies," in which the author goes beyond the mere construction of the die to speak about the functioning of the auger machine and the nature of the clay, which have great bearing on the operation of the die.

Chapter 4 is given over to "Dryer Details"—not that these details are "dry" in any sense of the word, for theoretical calculations pertaining to the evaporation of moisture, size of flues, vents and stacks have been avoided because such calculations are absolutely useless to the average clayworker. This chapter rather deals with constructional details.

Chapter 5 continues the subject under the caption "Dryer Construction." The drawings accompanying the text in this chapter are of great value.

The subject of setting kilns is next covered, Chapter 6, dealing with the setting of up-draft kilns. Almost nothing has been written on this subject, so that this chapter is a welcome addition to the information on this particular subject.

Chapter 7 is entitled, "Setting Down-Draft Kilns," in which many helpful suggestions are given, together with drawings which should enable the most perplexed clayworker to overcome his setting difficulties.

"Down-Draft Kiln Design" is the subject of Chapter 8. In this chapter are given the fundamental principles covering the construction of all periodic kilns. Complete plans and working

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drawings, on a reduced scale, covering both round and rectangular down draft kilns of excellent design are included in the contents of this chapter.

Having dealt with design, the next subject taken up is "Down-draft Kiln Construction." This is a great subject and consequently Chapter 9 is a vital chapter of the book. If the suggestions given in this chapter were followed out in the construction of most of the kilns on the clay plants in this country, it is needless to say that the trouble-man would be out of a job.

The next chapter marks the beginning of a new division in the book which deals with continuous kilns. First, the subject of "Continuous Kiln Foundations" is covered in Chapter 10. This is followed by a chapter on "Continuous Kiln Walls," and then Chapter 12 on "Partition and Flue Walls." The subject of "Kiln Roof and Producer House Construction," is next handled in a highly commendable manner.

So much for the construction of continuous kilns. The author now goes into the operation of this type of kiln, detailing the contents of Chapter 14 to "Operating a Coal-Fired Continuous Kiln." This is followed by Chapter 15, which has for its subject "Operating a Gas-Fired Chamber Kiln."

The subject of Chapter 16 is "Suggestions on Plant Location and Design," which is the last word with regard to the building of factories including the arrangement of machinery designed to manufacture clay products.

Much money would be saved and higher dividends on clay plant stock would be paid every year in the clay plants of America if the suggestions contained in Chapter 17, which is entitled, "Caring for Equipment," were followed out.

Then the great problem of "Running a Plant to Capacity" is covered in Chapter 18, which is the goal for which every superintendent and manager strives and the climax of this wonderful book.

mensions, in this Unparalleled Volume

Here Is the Table of Contents!

Chapter	1. Testing Clay Properties.
"	2. Hollow Ware Dies.
"	3. Factors Important to Dies.
"	4. Dryer Details.
"	5. Dryer Construction.
"	6. Setting Up-Draft Kilns.
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"	8. Down-Draft Kiln Design.
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"	10. Continuous Kiln Foundations.
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"	12. Partition and Flue Walls.
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"	14. Operating a Coal-Fired Continuous Kiln.
"	15. Operating a Gas-Fired Chamber Kiln.
"	16. Suggestions on Plant Location and Design.
"	17. Caring for Equipment.
"	18. Running a Plant to Capacity.

found in the principal museums of the world, selected for display as being representative of the highest type of modern ceramics. The Mrs. J. Ogden Armour prize was accorded by the Art Institute of Chicago.

In this country, Fulper pottery has a national distribution, with about 1200 high-grade shops, from coast to coast, displaying and selling the ware. A fine collective assortment of the ware is on display at the New York exhibit rooms of the company at 200 Fifth Avenue.

CARRYING OUT THE SPIRIT OF THE SHOP

To carry out the spirit of the shop, the company has devised individual and unique ways of promotion. Along the main motor highway leading to Flemington, distinctive wood guide signs have been placed, as shown in the illustration herewith. These invite the automobilist to visit the "Rickety Shop Showroom," as the display section at the plant is called, and are placed at every mile along the road. The illustration of the sign here shown is that of the one at White House, 11 miles from Flemington, and such mileage being indicated on the vertical base strip holding the main sign-board, as will be noted.

The company letterhead conveys the theme of antique art pottery in an impressive way, and the same style characteristic hand-drawn lettering predominates in other phases of publicity adopted by the organization. To Mr. Fulper is due all credit for the present high status of the plant production; for years past he has made a close, intensive study of ceramics, and the rewards of this work are now being enjoyed. He is an active member of the American Ceramic Society, and in 1915 was made a Master Craftsman by the Boston Society of Arts and Crafts.

In passing, it is interesting to note that the constant increasing demand for this art pottery has brought about the necessity for plant expansion. Preliminary plans are under way for the construction of a new plant, supplementing the present shops, and while actual erection will be deferred until a later date, the need and necessity for larger capacity is fully apparent. This shows in a forceful way the success that can accrue to the producer of burned clay products of American materials, where high-grade manufacture and individuality are the keynotes.

KING FOR GOVERNOR

The eastern representative of *Brick and Clay Record* had the pleasure of visiting the Fulper Pottery in company with Warren A. King, one of the candidates for the Republican nomination for Governor at the forthcoming primaries, and Charles A. Bloomfield, Metuchen, well-known in clay and ceramic circles thruout the country, who, with others in these lines of activity, is supporting Mr. King.

And it so happened that this was one of the days of the annual fair and exposition at Flemington, an event which brings visitors from all parts of the state, to see the horse races and other attractions; to this point the party journeyed, just as had Charles Howell Cook, president of the Cook Pottery, Trenton, N. J., and president of the New Jersey Clay Workers' Association, with another party from his city. It was a fitting climax of the day to "snap" Mr. Cook and Mr. Bloomfield together, two of the most prominent men of the ceramic industry thruout this district. And still better, Warren A. King was looking over their shoulders. So here's a famous trio.



Potters Receive Five Per Cent. Increase

A general increase of five per cent. and advances upon the making prices of some items in addition, formed the salient points in the final settlement of the two years' wage scale

effective October 1 next between the labor committee of the United States Potters' Association and the conference committee of the National Brotherhood of Operative Potters, at conferences just ended at Atlantic City. The discussions lasted four days only, there being thirty-six propositions considered from the side of the workers and a number of counter propositions from the manufacturers. At the close of the conference and the return of the several committees to East Liverpool, the following statement was issued:

"An agreement to go into effect October 1, was concluded at seven o'clock, Saturday evening, September 6, at the Chalfonte Hotel, Atlantic City, between the United States Potters' Association and the conference committee of the National Brotherhood of Operative Potters, the latter organization having the option of reopening the wage question in case the cost of living should continue to soar, the manufacturers feeling that the peak of the high costs had been reached and the tendency will be to lower prices.

"The most serious situation which has confronted the industry in years was bridged at the conclusion of the agreement.

"From the 1919 conference will date a return to the times when potters will once more give serious thought to the well doing of their tasks, and have pride in the product of their skill and effort.

"The most serious discussions were indulged in over the lack of care in work and the very serious slighting of work by speeding and by attempting to do in five and seven hours the work of eight hours.

"Certain increases were worked out to cover items, the base price of which did not seem to be such as to produce wages to compare with other items in that branch or with other trades in the pottery.

"Committees will endeavor to work from the present base prices on dishes those which are not well paid and these will be increased to average with other branches.

"Block handling and the handling of dairy mugs were substantially increased to the base prices.

"A new net day wage for packers was adopted at seventy-five cents per hour. (The present wage for packers is \$5.10 per day.)

"Increases were granted in the base prices for turning of table mugs and single and double cups and the casting of restaurant creams.

"The manufacturers will also provide for the sweeping of shops at their own expense.

"The term of apprenticeship saggermakers was cut from four to three years, the manufacturers to pay their wages for the first two weeks, and the apprentice to remain in the employ of the firm for the full term of apprenticeship.

"Other changes and conditions agreed upon with the general increase of five per cent. to present wages which is six and one-half to eight per cent. on the pre-war scale."



British Pottery Trade Union Amalgamation

The London press announces that the operatives in the British pottery trade have decided, by a large majority vote, to join forces and amalgamate their three trade unions—the National Society of Pottery Workers, the United Ovenmen's Society, and the United Packers' Association—having a joint membership of 40,000. Recently all the British pottery manufacturers' associations were amalgamated in the British Pottery Manufacturers' Federation.



The Cook China Co., Trenton, N. J., has filed plans for the erection of a one-story kiln shed at its works on North Clinton Avenue.

The SUPERINTENDENT

Helpful Hints for Practical Men
Whose Problem is Maximum
Production With Minimum Cost

Form for Building Flue Arches

To build flues for kilns, dryers and waste heat system is a common task to every brick or tile plant. Hence any device made that will aid in construction work of flues will be welcomed by everybody. The article about which this item concerns is a form of unusual design for supporting the brick set in the arch of a flue. This device which is illustrated herewith is another one of the very excellent pieces of labor-saving equipment developed by M. M. Minter of the Flint River Brick Co., Albany, Ga. Mr. Minter has spent a great many years in kiln building and has devised a number of kinks that are of great help in construction work about the clay plant. The arch form which is described in this item is very easy to construct, simple to use and operate and not at all costly.

The method of constructing this arch form is very simple and by referring to the accompanying illustration it can



A Close-up View, Which Enables One to Study the Details of Construction for an Ingenious Device Used to Aid the Brick-layer in Constructing Arches for Flues.

be readily understood without any description. By lifting the string which is attached to part of the apparatus, the crown of the equipment is caused to raise by reason of the lever arrangement which can be noted by studying the illustration. When the brick arch has been constructed and it is desirable to remove the form, all that is required is to loosen the string and permit the crown to lower. The form may then be easily removed.

By using the above device, much time and labor is saved. There is no difficulty in removing the form such as is met with in the use of rigid forms which often cannot be taken out without damaging the apparatus.

Influence of Water in Fire Clay Mixture

Whenever a clay or a mixture of clays is made into a plastic working mass, the question of influence of the water content must necessarily have consideration. Just what influence the per cent. of water used has on the physical structure of the clay during the burning and drying stages, is not fully understood, altho it has been the general impression that the structure of the finished ware is affected to a greater or less extent.

In the manufacture of many products, it is customary for the individual workman to desire a certain consistency of the ware. This consistency varies considerably with different workmen. In other cases, when a clay is handled by machine only and not by hand, the water content may vary quite widely thru carelessness of workmen, and lack of consideration of the subject.

Not long ago a series of tests were made which are reported in the Transactions of the American Ceramic Society, the purpose of the tests being to learn how large the variation in water content may be, without materially effecting the physical structure during drying and burning. Clay and clay-grog mixtures were made up with four different percentages of water, care being taken to reach the two extremes. These extremes were well beyond the best working consistency, being as soft and as stiff as possible to still allow molding. Tests were made on drying shrinkage. After careful drying the shrinkages were measured, and some of the bars broken to obtain the modulus of rupture of the raw clay. The remaining bars were burned to various cone temperatures to determine the physical properties in the burned state.

The conclusions arrived at from the tests mentioned above, were first that the water content, if varied to any extent will affect the drying shrinkage and would have to be considered in factory practice where this point is important. Secondly, the burning porosity is affected to some extent, especially in mixtures where fifty per cent. of grog is used. The maximum variation is four per cent. and with the normal working consistency this variation would be only two and one-half to three per cent. In most cases this would not be important.

In general, the results showed with the samples tested, any ordinary variation in water content will not change to any considerable extent the properties of the burned mass. The effect is greatest when the burning is carried to vitrification or beyond. In discussing the above results, Prof. Parmelee stated that while these results were without doubt obtained on the clays experimented with, it is an open question as to whether the conclusions found were general. Mr. Purdy stated that he has found that it makes a big difference just what water content you have. It may not effect the modulus of rupture, but it will effect structure where you are having pieces joined, especially as in saggars where, as in a machine, you are forcing it up the side, or by hand you are welding the rings to the bottom.

IN *the* WAKE *of the* NEWS

Being a Brief Mention of a Host of Interesting Happenings in the Varied Fields of the Clayworking Industry

Personal

W. T. Matthews, salesmanager of the Claycraft Brick Co., of Columbus, Ohio, left September 15 on his annual vacation to parts unknown, as he desires a complete rest.

David McGill, who operates a large brick and clay products jobbing business in Montreal, Canada, was in Columbus recently calling on manufacturers.

J. L. Platt, of the Platt Co., Van Meter, Iowa, who has been in a hospital in Ann Arbor, Mich., for some time, has returned to his home in Van Meter very much improved in health.

J. R. Marker, commissioner of the Ohio Paving Brick Manufacturers' Association, returned recently from his annual vacation trip spent in Canada. He was at the office only a short time when he was taken ill, but is recovering nicely.

B. C. Keeler, of Mason City, Iowa, who has been in California for some time past, has returned to Iowa to again take up active work in the Keeler clay industries at Mason City. F. E. Keeler, who has been in charge during the absence of B. C. Keeler, will return to his California home.

One of the pioneer brick men of the Middle West was lost to the industry in Cleveland, Ohio, in the death of William R. Maile, who passed away on September 5 at his home in Lakewood, Ohio. Mr. Maile was 86 years of age, and one of the oldest brick and tile manufacturers in Ohio, having started a brick plant in 1858.

Louis E. Meir, distributor of clay products in LaCrosse, Wis., made a trip to Milwaukee recently to drive back a new 1920 model Oldsmobile. He took the car from the distributor at three o'clock in the afternoon and drove his family around the city that afternoon. Early in the evening he parked his car in the busy section of the city, from where it was stolen. No trace of the car has been found and his loss is \$1,550. The car was in his possession only seven hours.

Clinton Cowen, who has been Ohio highway commissioner for the past four years and a half, resigned recently, effective at once and was succeeded by A. R. Taylor, of Findlay, formerly surveyor of Hancock County. He has taken charge and retains the greater part of the old organization. During the terms of office of Mr. Cowen contracts for road improvement in the Buckeye State costing approximately \$30,000,000 were awarded. During that period the cause of good roads was given the greatest boast in the history of the state. Mr. Cowen becomes consulting engineer for the National Sand & Gravel Association and will have his headquarters in Cincinnati.

Arizona

Because of the thoro investigations made by C. E. Baudisch, who spent considerable time and trouble in searching for clay that could be used for the manufacture of brick, Douglas, Ariz., is to be favored with a clay plant. A large quantity of clay has been located thirty miles north

of Douglas on the Courtland branch of the El Paso & Southwestern Railroad. The clay has been thoroly tested at a brickmaking plant owned by J. C. Steele & Sons, at Statesville, N. C. Upon finding the tests successful, a company was organized of which Dr. M. L. Downs is president, D. N. Darling, vice-president, and C. E. Baudisch, secretary-treasurer. The new plant will be known as the Douglas Brick & Tile Co., and has been incorporated with a capital stock of \$150,000. Six, twenty-eight foot down-draft kilns will be constructed to be burned with oil and an open-air dryer which will be supplanted by a radiated heat dryer later, will be installed. The capacity of the new factory will be 50,000 brick per eight-hour day for the present, but it is proposed to increase this output later as well as to manufacture all kinds of hollow block, drain tile, silo block and roofingtile. This infant company has enough advance orders on hand to keep it running for the next two years on common brick alone.

California

The contract for the tile roofing for the Merced High School at Merced, Cal., has been awarded to C. L. Passmore, of Los Angeles, Cal., for \$9,255.

Brick is to be used in the erection of a one-story garage to be located in L Street, between Sixth and Seventh Streets, Sacramento, Cal. Another brick garage is planned for 721 M Street at a cost of \$13,600.

Hollow tile and stucco is to be used for the proposed school building in the Thousand Oaks tract at Berkeley, Cal. Plans are completed calling for an expenditure of \$65,000 for this building. The exterior tiled walls are to be stuccoed.

Dealers in San Francisco express satisfaction with existing conditions in the sales department of their business, but labor problems are a source of annoyance here as well as in other cities thruout the country. The main difficulty is in finding a sufficient force with which to handle the orders now on file, and factories and plants are offering every inducement to their workmen for dependable service.

Building construction in San Francisco for the month of August exceeded any month since the beginning of the reconstruction period following the war, according to the latest report filed with the board of public works by the chief of the building inspection bureau. During the month permits for building totaling \$2,565,859 were issued, an excess of over \$1,500,000 over the amount issued during the previous August, and \$700,000 more than in July of this year.

Brick and other clay products manufacturers and dealers are gratified at the growing amount of clay products which are being used in many of the new structures now under construction in San Francisco and surrounding territory. The permits for August are divided into the following classes:

Three class A buildings, \$915,525; two class B buildings, \$285,000; twenty-four class C buildings, \$564,930; eighty frame dwellings, \$420,393; two waterfront structures, \$59,710; 436 alteration and reconstruction jobs, \$320,251.

It has been noticed that brick in house building is coming in for an increased share of prominence in communities of Southern California as a result of the nation-wide publicity campaign which the brick manufacturers of that district have recently launched. The dealers believe that many more persons in Los Angeles, for instance, would use brick in preference to wood in building moderate-priced homes, if they were convinced that they could do so more economically. The many advantages of brick construction are being pointed out to the prospective home builder with telling results, according to the brick men of the southern part of the state. Its superior fire-resisting qualities and its permanence are offered as reasons why it is an excellent building material for the smaller home as well as the commercial type of structure.

Several buildings soon to be under course of construction in San Francisco will require considerable amounts of various types of brick and other clay products. E. Curtis, well known auctioneer of this city, is to have a new two-story and basement class C concrete and brick store and loft building in Sutter Street between Powell and Mason Streets. The structure will cost about \$65,000 and will have a brick and terra cotta front. A number of garages and machine shops are going up in different parts of the city and the majority call for brick and partly-brick construction. Plans have just been completed for a one-story class C brick store and machine shop, to be erected in Bush Street near Taylor at an estimated cost of \$30,000. The front of the structure is to be composed of pressed brick, glass and marble. Other local plans include a one-story brick auto repair shop to be located at Post and Leavenworth Streets at an approximate cost of \$14,000, a one-story brick shop building, to be erected in Mission Street near Fourteenth for \$8,000, and a one-story brick garage building to be built in Van Ness Avenue between Tuolumne and Stanislaus Streets at a figured cost of \$13,700.

Delaware

The Klimax Kaolin Co., Wilmington, Del., has been incorporated with a capital of \$100,000 to operate kaolin, clay and other properties. William F. O'Keefe, George C. Steigler and J. H. Dowdell, all of Wilmington, are the local incorporators.

The Charles Warner Co., Wilmington, Del., is doing its usual good business in mason materials, and while trade could be better, the company has no complaint to offer. This yard has an output of about \$14,000 per month and is keeping well up to this mark. A fleet of ten motor trucks is being operated at the present time, with about an equal number of teams.

To solve the housing problem now current at Wilmington, Del., the mayor has appointed a committee to investigate the present costs of building in the city, and decide upon the feasibility of organizing a stock company for the purpose of building homes for selling to people of modest means. The demand for houses of all kinds at the present time is unprecedented, and every effort is to be made to bring about a large volume of construction work of this type to insure positive relief.

There is a fine call for building materials of all kinds at Wilmington, Del., and vicinity at the present time. Common brick, face brick, hollow tile and other burned clay specialties are found at the head of the list in the line of strength of demand, and these products in certain sections are operating at a high water mark. Good hard common brick is selling locally for about \$20 per thousand, delivered on the job, and with activity of call, it would not be surprising if this quotation advanced as the season progresses. Hollow

building tile is selling for from \$50 upwards per thousand, according to size. Face brick is in good call, particularly light colors, with price range at from \$40 to \$50 for desirable selections.

Building work continues to advance in volume at Wilmington, Del., and vicinity. There is no let-up, or thought of let-up in sight, and with the opening of the fall season under such auspicious circumstances, it is likely that the winter season following will continue to more than hold its own in the matter of housing and industrial work. These are the two predominating phases in local building circles, with brick a prominent factor in the situation. It is said that about \$2,000,000 in new construction work is projected in this district at the present time for immediate action, with another \$1,000,000 in buildings in sight. Local architects and engineers are busy in the preparation of plans for a number of important structures. Labor conditions, as in other cities of the east, are acting as sort of a bar to utmost progress, and bricklayers, painters and others in the building trades are making demands for higher wages. Realty interests are busy at the present time, and property involving many thousands of dollars is changing hands.

Indiana

The Falls Cities Hydraulic Brick Co. has been incorporated at Jeffersonville, Ind. with a capital of \$50,000, to manufacture and sell brick. The directors are: Walter E. McCulloch, George C. Kopp and Harry W. Elliott.

Howard Leach, of the Kokomo (Ind.) Brick Co. reports that the building boom is in full sway in Kokomo, and although his company has a production of 36,000 brick a day, it is not able to supply the demands. The Kokomo Brick Co. is supplying the new buildings of the Haynes Automobile Co., the Conradt Theatre, and the Apperson Brothers' new office building. Mr. Leach states that the present output of the factory is sold ahead over sixty days, and that their greatest trouble is securing help.

Iowa

The Adel (Iowa) Clay Products Co. has let the contract for the removal of 75,000 yards of overburden from their shale bank and also for some extensive grading bringing a large area up to grade with their present plant.

The Platt Co., Van Meter, Iowa, has contracted for electrical equipment to drive all the machinery in the plant. Two new kilns have recently been completed at the Platt plant and this fall the yards will be paved to provide for electric truck wheeling of the burned ware.

J. Herdlika, owner of the De Soto (Iowa) Brick & Tile Co., whose plant was destroyed by fire about sixty days ago, is making plans to rebuild the plant at once. Mr. Herdlika has contracted with a silo concern to use the full capacity of the new plant.

The Vincent Clay Products Co., Ft. Dodge, Iowa, has recently installed a button conveyor. The conveyor at the Vincent plant delivers direct into the side of the dry-pan with the auxiliary elevator and so far is giving excellent results.

Twenty-three Iowa clay producers have now signed the tonnage sales agreement which was adopted at the last annual meeting of the Permanent Buildings Society. The plan is meeting with a ready response among the producers and a number of additional plants are expected to sign up in the very near future.

C. B. Platt, secretary of the Permanent Buildings Society, who recently made a trip thru the northern part of Iowa visiting the plants in the Mason City and Ft. Dodge

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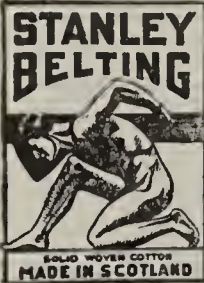
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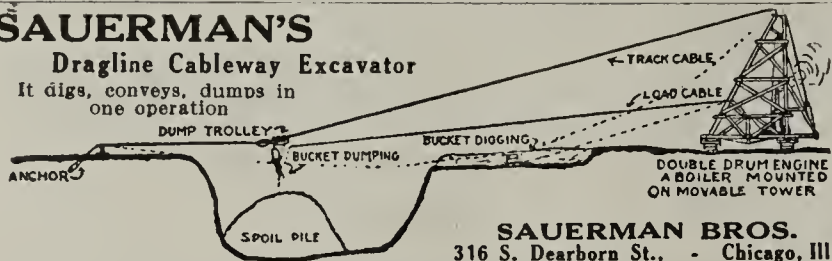
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districts, reports all plants in that section working at full capacity and from four to ten weeks behind on their orders. Altho there is a noticeable labor shortage it is not acute.

Kansas

The Humboldt (Kans.) Brick Manufacturing Co. is building a large continuous kiln for burning brick and tile. Coal is to be used for fuel.

Louisiana

A. Lagrange, vice-president and treasurer of Delatte & Lagrange, Inc., Lake Charles, La., writes that they are considering increasing the capacity of their plant to take care of orders.

G. G. Barham, a contractor and builder of Oak Ridge, La., is now organizing a company with a capital stock of \$10,000, to operate a brick plant. They will install a stiff-mud brick outfit, with a capacity of 20,000 brick per day, and will use natural gas as fuel. Work on the construction of the plant will start the latter part of December and the company expects to be turning out brick by spring.

Maryland

At Brooklyn and Curtis Bay, near Baltimore, Md., "boom" times in construction work are being experienced. These districts are devoted for the most part to large industrial plants, and millions of dollars are being expended at the present time for extensions and improvements at the different works. At Hagerstown, Md., there is a good demand for homes and a number of important projects of this nature are now under way in this section.

Baltimore is holding its own as one of the cities of the east operating under top-notch construction activities, for things in building circles continue at high water mark in this district. Both housing work and industrial operations are coming along in fine style, while public buildings are not far behind. The fall season has opened up in a most encouraging way, and building interests as a unit are optimistic as to the general prospects. A large number of brick dwellings are being constructed, and prominent in this work is the Acme Building Co., which has plans under way for the erection of six three-story brick dwellings on Holmes Avenue; ten three-story brick homes on Bryant Avenue; and five three-story brick dwellings on Pennsylvania Avenue. In regard to industrial work, the United States Industrial Alcohol Co. has arranged for the erection of a new plant in the Curtis Bay section to cost about \$250,000; the Rice Motors Co. is planning for the construction of a two-story brick automobile service works on Whitelock Street, to cost about \$100,000; and the Baltimore Tube Co. will commence the immediate erection of a new two-story plant, 77x146 ft., to cost about \$55,000.

Brick manufacturers and mason material dealers at Baltimore and outlying districts have little cause for complaint at the present time. The call for building materials of all kinds is good—decidedly so. Common brick is operating under a fine call, with price holding firm at \$17 per thousand, delivered on the job; salmon varieties are selling for around \$14 per thousand. Face brick is another burned clay specialty that is engaging under popular call, with reds and light colors in demand. A good selection can be obtained for about \$40 per thousand. Fire brick shows no let-up in demand, with price quotation at \$75 per thousand for No. 1 standard, delivered on the job. Hollow building tile is at a pretty high level for this part of the country, selling from \$67 upwards per thousand, according to size.

Clay partition tile, 3x12x12 in., is bringing \$125 per thousand, delivered on the job. The motor truck business is thriving locally these days, for the majority of manufacturers and dealers use this means of transportation, with deliveries made far beyond the regular city limits.

The Baltimore (Md.) Brick Co. reports conditions as being decidedly favorable at the present time. There is a fine demand for brick, and every evidence that this condition will obtain for months to come. Orders received from day to day are in such good volume as to insure continuous plant operation at capacity; the demand is just far enough ahead of supply to make matters very interesting, insuring a constant movement in the matter of production as well as in all features of operation. Stocks, at the same time, are being maintained in order that there will be no chance for shortage later on. This company, as is generally known, is one of the largest brick manufacturing concerns in this district. The organization has a total of twelve brick yards, seven of which are being operated at full capacity at the present time. With present bright prospects maintaining, coupled with continued good call for material, it is possible that other yards will be started up at an early date, until the full complement is producing. Under such conditions, the company has a capacity of about 250,000 brick a day. The material is of high grade nature and finds a ready market thruout this section. The company is operating a fleet of from 16 to 18 motor trucks, engaged in hauling brick from the plants for miles around. This company has always been one of the big sources of supply for brick at Baltimore. No horse-drawn trucks are being used. The company has not experienced any labor troubles, but reports considerable difficulty in securing good, reliable labor.

Massachusetts

Improvement in the building situation in Boston is indicated by reports from brick manufacturers. The American Brick Co., which has a plant a few miles from the city, reports a daily output of 45,000 brick and is sold ahead for six weeks. The demand is largely for brick for new industrial plants and for city and state buildings.

Most of the brick manufacturers of Massachusetts are finding enough business to keep them going, but individual orders are usually small. The market remains firm with dealers quoting \$19 delivered on the job and no prospect of reduction as long as wages continue at their present level.

Michigan

The Fairview Brick Co. has been incorporated at Detroit, Mich., by Fred S. Hall, James J. Flood and C. L. Houghten, with a capital of \$20,000. Its plant is on St. Jean Avenue.

Missouri

The J. Bright Construction Co. has been awarded the general building contract for the erection of the new factory of the Landis Machine Co., which is now located at 2500 Mullanphy Street, St. Louis, Mo. The building, which will be of brick construction, will cost \$300,000. The new plant, to be erected at Second Street and Gano Avenue, will be four stories high and 200 by 140 feet.

Nebraska

C. B. Hutton, of the Western Brick & Supply Co., Hastings, Neb., states that his concern is experiencing an active demand for their products but that the output has been reduced somewhat on account of labor and other difficulties.



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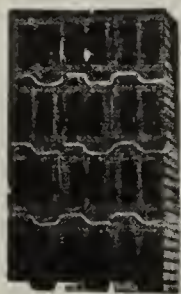
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The company is considering some changes in their dryer system at the present time.

New Jersey

The Bergen County Tile Co., Bogota, N. J., has been incorporated with a capital of \$5,000 to operate a floor and wall tile business. Alfred Ritchings of Bogota, heads the company.

To advance the candidacy of Warren C. King, Bound Brook, N. J., for the Republican nomination for Governor of the state, an organization, known as the King League has been formed. Ceramic interests, headed by Charles A. Bloomfield, Metuchen, are prominent in the league; Mr. Bloomfield is president and Henry G. Opdycke of Jersey City is state director. Should Mr. King be successful at the primaries, the league is to be maintained as a permanent organization.

August Staudt, president of the Perth Amboy (N. J.) Tile Works, has been appointed a director of the local Board of Trade to fill the vacancy caused by the death of Oliver W. Ramsay. A good rate of production is being maintained at the tile works at the present time, and a fine demand is reported for material. The plant specializes in the production of high grade floor tile and ceramics and is thoroly modern in all departments of operation. The company has a large number of contracts calling for best grade material to its credit. During the months past, the question of labor has been an important one with this organization, but things are looking brighter in this direction.

Rutgers College, New Brunswick, N. J., has received an unconditional gift of \$100,000 to the college endowment fund from August Hecksher, New York. Mr. Hecksher has also offered an additional like sum to endowment on condition that the college secures a fund of \$1,000,000 for college purposes by Jan. 1, 1920, including his gifts. It is expected that this sum will be raised by the alumni and friends of the college. The ceramic department at the institution is making ready for an active fall season, it being the intention to follow out the plans adopted by members of the New Jersey Clay Workers' Association, for manufacturers in this industry in the State to send students selected from their plants to the school.

The Philips-Harper Co., Trenton, N. J., reports business as being very brisk at the present time, with fine; increasing call for materials. This company specializes in burned clay products of all kinds, including face brick, common brick, enamel brick, fire brick, sewer brick, hollow tile, terra cotta, drain tile, etc. The company is acting as sole selling agent for the American Hollow Tile Co., with plant at Hightstown, N. J. This plant recently resumed operations and is now producing at the rate of about 50 tons of material a day. The price per block in thousand lots, delivered on the job, is now from 12 to 25 cents, according to size of material. The company reports a big demand for common brick, with quotations of \$18 per thousand f. o. b. cars, and \$19, per thousand delivered on the job in neighboring sections. There is a good call for fire brick, with price level at \$70 per thousand. A fleet of about 20 motor trucks is being kept busy at the present time.

There is certainly no let-up in call for brick, tile, fire brick and other burned clay products in New Jersey. Manufacturers and mason material dealers report things as being very satisfactory in the different important centers with prices holding very firm at present quotations. At Newark, good, hard common brick is selling for \$20 per thousand, delivered on the job, with salmon varieties a few dollars

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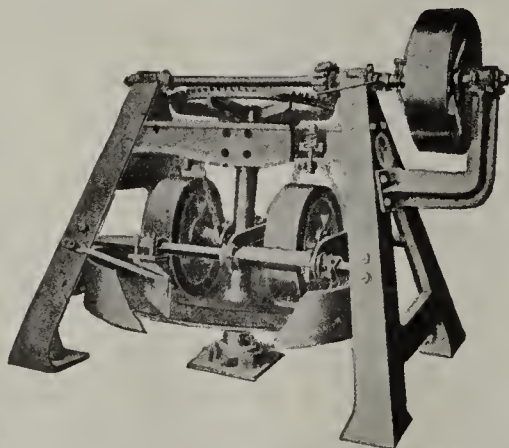
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Brick and Clay Record

610 Federal Street, Chicago, Ill.

THE EAGLE DRY PAN



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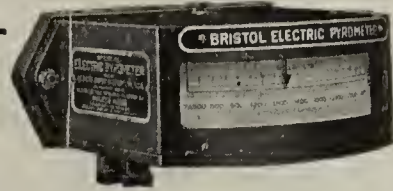
EAGLE IRON WORKS DES MOINES
IOWA

less. Good sized shipments are being received from the Hudson River brick yards, a number of barge loads each week finding their way to this section. In the south Jersey districts, good quality building brick is selling for \$18 and \$19; at Plainfield, where the call is exceptionally good at the present time, the price is \$22 delivered on the job, and a closely similar figure holds at New Brunswick; at Trenton, a point of manufacture, the price is \$15, while at Hackensack a price of \$16 at the yard, and \$17.50 delivered on the job obtains; at Paterson, the price is \$19 for good grade material. Hollow tile is operating under a good demand, as is clay pipe and kindred burned clay specialties. The demand for fire brick is apparently growing, with current quotations averaging about \$65 to \$70 per thousand. Face brick is more than holding its own under a growing call, with prices ranging from \$35 to \$40 and \$50 for selected stocks.

Trenton, N. J., is one of the busy cities of the State these days. Not only is this true in the matter of brick and other ceramic production, but in connection with building operations. and a number of important construction projects have now come to a definite conclusion. The demand for brick and burned clay products is good in this vicinity at the present time and there is every evidence that the Fall season will bring still further increase to the call. During the past month plans to the estimated valuation of \$306,506 were filed at the building department, as against a total of \$63,555 during the same period for the year 1918. Brick is the predominating building material for new building enterprises of all kinds in this district, including housing work and industrial plants, while hollow tile is a close second. Bids have been opened for the erection of the new Stacy-Trent Hotel, and it is expected to award the building contract for this structure at an early date. William Slack & Sons, St. Regis Theater Building, are preparing plans for the construction of a new brick theater, with terra cotta trimming to be located on South Broad Street.

Henry Gardner, Little Ferry, near Hackensack, N. J., is maintaining a good rate of production at his local brick yard, and reports a good call for material. The plant is being run on a piece-work basis of production, and which system has many points of merit to command it for plant service these days. The present production is averaging around 39,000 brick per day, with the employment of about 45 men at the yard. The organization has its own clay properties in the vicinity of the plant, using motor trucks as well as horses for hauling the raw material to the general plant. The company produces a high grade brick and finds a ready outlet for all material manufactured; under good demand, as experienced for the past months, it has been impossible to accumulate much of a surplus, and for this reason, there is but a reasonable amount of stock on hand at the present time. The present quotation for brick is \$16 per thousand at the yard. The company builds its own kilns, as required, with each kiln of a size to hold about 45,000 brick. Mr. Gardner is one of the enterprising brick manufacturers of this section, and keeps a plant that is neat and orderly and up-to-the-minute in all particulars.

The Raritan River section of New Jersey is coming into its own again in the matter of clay-working operations, as well as building construction. At Perth Amboy, South Amboy, Keyport, Metuchen and other points in this district, the building movement is under way with a good swing, and construction totals from week to week are rounding out with higher averages. The ceramic plants in this section are busy, including those plants devoted to burned



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If there are "grilling conditions" in your plant, we would welcome the opportunity to prove the many advantages of using UNION STEEL CHAINS.

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"BRICK AND CLAY RECORD"

clay building products and others manufacturing chemical stoneware and pottery specialties. The intercoastal canal project, providing for the building of a ship canal across the state, referred to in a previous issue of *Brick and Clay Record*, is receiving more and more prominence thruout this district. A series of meetings has been held with well-known speakers, and everything possible is being done by ceramic and other industrial interests to further the movement in the right way; unquestionably, the realization of the plans as now projected will be of material benefit to the Raritan River section. The ship canal will extend from Morgan to Bordentown, near Trenton. John Pfeiffer of Henry Maurer & Sons, and prominent in the local Clay Miners & Manufacturers' Association, has been prominent in making addresses in support of the project.

The first half of the month of September at Newark, N. J., shows construction totals exceeding in valuation this entire month for 1918. If evidence were needed that building work is coming into its own in the right way in this city, and in fact thruout northern New Jersey, it is found in the actual figures which cover the conditions. During the first two weeks in September, building permits at Newark totaled \$544,429 in valuation, as against \$467,215 for the entire corresponding month of a year ago, or a gain of \$77,214. In a general way, this means that the general totals are more than double those of the same periods for 1918. Factory construction is taking on a prominent status at Newark, and the majority of these structures are of brick. The New Jersey Savold Tire Co. is building a new one-story brick factory on Elizabeth Avenue to cost about \$30,000; The American Platinum Co., has filed plans for the erection of its proposed plant addition, of brick construction, on New Jersey Railroad Avenue, to cost about \$100,000; and the Radel Leather Mfg. Co., is having plans prepared for the erection of a brick addition to its plant, 94x112 ft. to cost about \$30,000. The erection of brick homes is not far behind, and a large volume of plans have been filed for residences of this character.

The gains in construction work thruout New Jersey continue. The first weeks of September show an encouraging increase over totals for the corresponding period of last year, and eclipse in aggregate even some of the high-water marks attained in different cities of the state during the summer season. With the turn of Fall, prospective builders are all the more coming into prominence, and it is evident that the time of hesitancy is past. Labor is the big hindrance to even more substantial progress, and strikes and rumors of strikes in the building trades are acting as sort of a barrier to top-notch operations. This condition is distinctly apparent at Newark, where the carpenters, painters and other operatives in construction work have been making demands for increased wages. Notwithstanding this situation, however, the call for brick and burned clay products, as well as other mason materials is good in this section, while the same applies to Jersey City, Paterson, Passaic, Morristown, Plainfield, Trenton and other points in the state, including the shore resorts. The way that the Fall season has opened up is highly satisfactory to manufacturers of building materials, dealers and others in the trade; in many respects, and particularly in the matter of housing work, it bids fair not only to break previous records, but to gain in momentum as the winter comes. It would be difficult at the present time to find a community of any size in the state that is not doing something in this direction, and which does not intend to do more as the months advance.

New York

Walter C. Harrington, Inc., Irondequoit, N. Y., has been incorporated with a capital of \$20,000 to manufacture brick, tile and pottery specialties. W. C. Harrington, W. F. and G. T. Hallauer, all of Irondequoit, head the company.

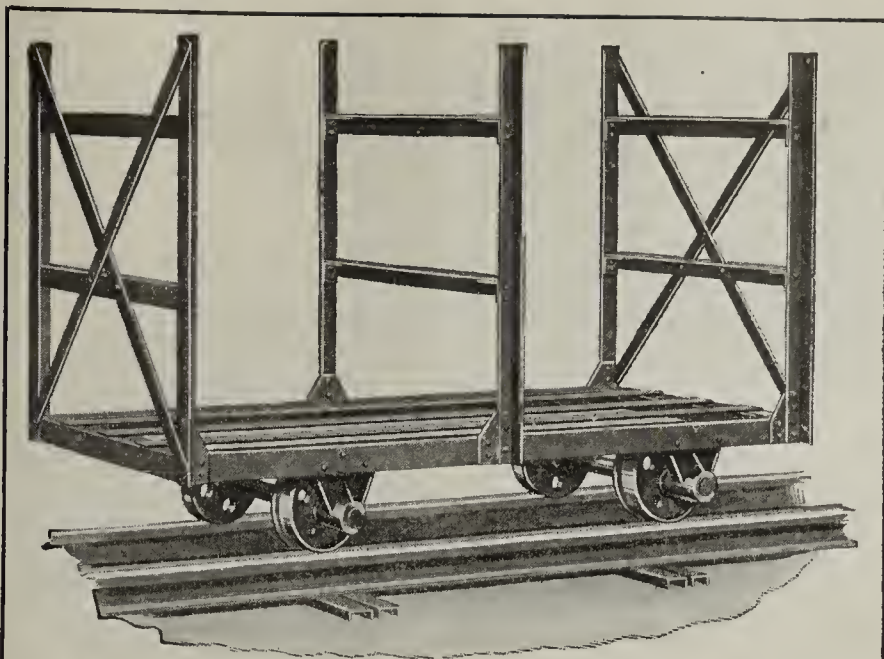
The "Own-Your-Own-Home" Exposition at the Seventy-first Regiment Armory, New York, September 6-13, proved highly successful, and was crowded thruout the week. The exhibition was arranged under the management of Robert H. Sexton, and represented the "last word" in home and house building.

R. G. Eisenhart, of the Consolidated Brick Co., Horseheads, N. Y., reports business conditions good. The company is installing new dryer cars and expects to add a new brick machine in the near future, in an effort to improve the quality and reduce the cost of making their products. Mr. Eisenhart has just had the pleasure of welcoming back to the office his grandson, who has been in service in France for two years.

Production has slackened a little at the brick yards in the Hudson River district during the past few weeks on account of the rainy weather. It has been difficult to produce at anywhere near desired capacity, for the season of manufacture is now waning, and every day is just so valuable in rounding out the desired output. A good quota of cargoes is being shipped, but these shipments cover production, for the most part, in 1918, and even as far back as 1917, so that such quantities have no direct bearing on what the yards are now doing. The labor situation is righting itself to a degree, altho good labor is still at a premium, and high manufacturing costs prevail.

In explanation of the building strike situation at New York, the Mason Builders' Association has issued a public announcement to "Investors, Owners, Employers and Workers Who Have the Welfare and Progress of the Building Industry at Heart." Following a synopsis of the wage scales asked, the announcement says: "We ask the indulgence and assistance of those interested in our industry, in the fight we are making against an inordinate wage scale not warranted in any way and which would spell disaster for ourselves, as well as for our workers if the bricklayers were to be successful in this contention. The wages of the workers in the entire industry must be stabilized for this year and next so as to enable the contractors to have a cost basis for submitting bids, and that the owner and investor may know what the work is to cost and that the same can be prosecuted without interruption."

Desired progress in construction work at New York and vicinity has been impeded during the past fortnight by conditions in the building trades. The bricklayers and those in several other important branches of construction are still out on strike—and all with demands for higher wages; the brick workers are asking \$10 for an 8-hour working day. The situation as it has developed does not indicate any prompt settlement, and the result is that thousands and thousands of dollars in building operations are being tied up thru inactivity. At the same time, architects and engineers continue to be busy on plans for proposed work and in all directions, where possible, things are moving in an encouraging way. The demand for homes continues—realty interests say that such a call as now evidenced for available quarters has never been experienced. October is the usual renting season and thruout September a great effort has been made by builders to complete apartment houses, flats, dwellings and other similar structures as are



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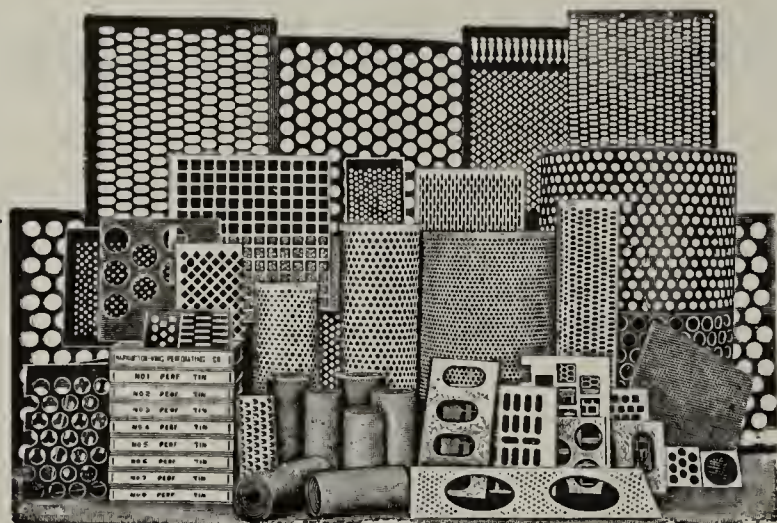
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You can get a higher price and influence
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Efflorescence is prevented absolutely.

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well under way, seeking to have these buildings ready for occupancy at close to schedule time. With this demand for homes and other structures, things in building circles are ready to "hum," as soon as the labor situation rights itself. for one of the biggest winter building seasons the big city has ever seen is apparently on the way.

Despite the strike situation, there is a good call for common and face brick, as well as other popular burned clay specialties in the New York district. The mason material dealers are busy and stocks are being kept up in anticipation of a growing call. During the past weeks there has been considerable discussion regarding the closing of building supply yards of all kinds, in response to a request from the master builders, it being deemed that this action would lead to a more rapid settlement of the strike situation. Up to the present time, however, there has been no decided move in this direction, and it is likely that the yards will continue to do business. Prices are holding firm for all basic products; late rumors are heard that the price of brick is likely to advance from the \$15 per thousand, wholesale level which has been established for many months past, but there is apparently no reason for such an increase—at least for the next few months to come, and a change is unlikely. A good number of cargoes are arriving from Hudson River points, and there is no difficulty in ready distribution. Brooklyn continues to draw heavy for house construction, and during the first two weeks of the month no less than 15 cargoes found their way to this borough. The price, delivered on job, is now \$18.15, as against \$17.85 a few weeks ago. There are no wholesale quotations on paving brick or brick from the Raritan River district at the present time. Face brick is operating under a good call, with price range from \$40 to \$50 per thousand. Hollow tile shows no change in price, being quoted at \$63.75 per thousand sq. ft., for 2x12x12 in., to \$153 for 6x12x12 ft. Fire brick, No. 1 Standard is selling for around \$60 per thousand.

Ohio

The Lima (Ohio) Brick Co., has been capitalized at \$12,000, by W. B. Kirk.

A letting of bids by the Ohio Highway Commission took place September 12 when many of the paving brick manufacturers of the state were in Columbus. Included in the list of 38 contracts were a number of brick jobs. The successful bidders will be announced soon.

Operations at the Newburg plant of the Cleveland Builders Supply & Brick Co. will start about the middle of September. This plant will be given over to the production of hollow tile and shale brick. No common brick will be made at this plant.

One of the improvements being made by the recently organized Franklin Brick & Tile Co., of Columbus, is the erection of 20 houses at Taylor, just east of Columbus, to house its employees. Eight new kilns are being constructed and other improvements are projected.

A meeting of the field men of the Ohio Paving Brick Manufacturers' Association was held in Columbus, September 13, to discuss general conditions. Despite the car shortage there is now a fairly good movement of pavers. Several additional field men will soon be employed by the association.

It is reported that the Cleveland (Ohio) Builders Supply & Brick Co. is bringing 150 carloads of brick from Chicago as local brickyards cannot make enough brick to supply the present demand in Cleveland. Cleveland builders are try-

ing to get a year of building done in the next three months, the company states.

Residence and apartment building in Columbus still continues active, according to reports from the city building department and contractors and architects generally. There has been on the average of 15 new dwellings started each week for some time in the confines of the city and fully that many more in the suburbs, where it is not necessary to secure permits.

Hint that the Cleveland (Ohio) Builders Supply & Brick Co. had intended to enter the paving brick end of the building supply industry is denied by W. T. Rossiter, vice-president and general manager of the company. It is believed the rumor has gone thru the trade because of the purchase of the Metropolitan Paving Brick Co.'s plant at Willow, Ohio. This plant will be operated for the production of hollow tile, according to Mr. Rossiter, and there is no intention by the firm of going into the manufacture of paving brick.

The new plant of the Alliance (Ohio) Brick Co. is now under way and is being rushed to completion. Recently the stockholders of the company authorized an increase of the capital to \$500,000 to take care of the improvements. The new plant, which will have a capacity of 50,000 brick daily, will be erected within two miles of the present plant and almost within the confines of Alliance. A Richardson continuous kiln and gas producers will be features of the installation.

All of the face brick plants in the Hocking Valley field of Ohio are operating but with reduced labor supply that reduces the production to approximately 60 per cent. of capacity and even lower. With car supply about 30 to 40 per cent. shipping is far behind orders, not because of a rush of orders but because of inability to ship. Prices are stationary at the levels which have prevailed for some time and there is little likelihood of an advance in the immediate future.

Building operations in Columbus during the month of August were especially active in comparison with August of the previous years and in fact was a record month in the history of construction work in the city. During the month the city building department issued 324 permits, having a valuation of \$763,830 as compared with 125 permits and a valuation of \$305,025 in August, 1918. For the eight months of the year the department issued 2,345 permits having a valuation of \$4,142,280 as compared with 1,322 permits and a valuation of \$2,062,970 in the corresponding period in 1918.

The city of Columbus takes seventh rank among Ohio cities in building work which is shown by a recent report made public when construction figures from the principal places in the state are compared. Cleveland led the state in July with \$5,165,075 expended on construction work with Akron second with \$4,243,407; Cincinnati next with \$1,562,890; Dayton next with \$1,084,345; Canton with \$793,000; Youngstown with \$717,740; Columbus, \$658,710, and Toledo \$620,229. During the month of August, however, Columbus showed up much better and will show a higher position when August figures are tabulated.

The Independent Brick & Tile Co., Cleveland, Ohio, was to receive its incorporation papers soon after September 15. This was announced this week by Herbert F. Geist, head of the Geist Building Material Co., and who is heading the new concern. Negotiations have been completed for the construction of a modern plant within the switching limits of Cleveland, where two units will be erected at once. The product at the start will be confined exclusively to common

The "A" ERIE weighs 13 tons, and operates a dipper of $\frac{1}{2}$ cu. yd. capacity.

The "B" ERIE weighs 20 tons, and operates a dipper of $\frac{3}{4}$ cu. yd. capacity.



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It was "No Laughing Matter"

Belt trouble never was and never will be a laughing matter. Do you know that each per cent of belt slip costs one per cent of the coal pile?

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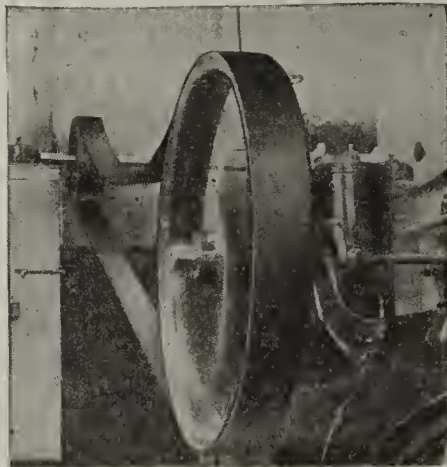
Below is a 10-in. Canvas Belt.

It connects a 16-in. driver and a 25-h. p. gas engine with a 48-in. driven pulley on a 12-ton ammonia refrigerator compressor, 8½-ft. between centers, in the plant of the Kervan Company, New York. They tell us: "We are more than satisfied with the results." As the photograph indicates, the belt runs nice and slack. By actual measurement, it runs 10-in. slack and doesn't slip under full load.

Before treating with Cling-Surface, they ran this belt tight and had so much trouble with it that, as they expressed it, "It was no laughing matter." Now they treat the belt with Cling-Surface, run it slack under full load and smile the usual Cling-Surface smile. It's the same story over and over. We have told it many times in 22 years, and there is every indication that we will continue to tell the same story in the same way, for we cannot see now how Cling-Surface can be improved.

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We will send 25 or 50-lbs. on approval. If you are not satisfied, no charge will be made. A few cents' worth will save a belt worth many dollars.



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and shale brick and building tile, Mr. Geist states. Because of the tremendous demand for these materials, distribution will be confined to the Cleveland district. Details of organization and operation will be perfected as soon as incorporation has been completed.

A meeting of manufacturers, members of the Ohio Paving Brick Manufacturers' Association, was held at the headquarters in Columbus September 11, when general conditions surrounding the paving brick business were discussed. It was reported that car shortage is holding up shipments to a large extent. Those at the meeting were H. S. Wilcox, Alliance Clay Products Co., Alliance; A. L. Bowers, Burton-Townsend Co., Zanesville; M. M. Morrow, Hocking Valley Brick Co., Columbus; L. Lawson Morris, Harris Brick Co., Cincinnati; H. L. Motz, Medal Paving Brick Co., Cleveland; C. C. Blair, Metropolitan Paving Brick Co., Canton; J. L. Murphy, Nelsonville Brick Co., Nelsonville, and F. L. Manning, Peoples' Paving Brick Co., Portsmouth.

One of the features of the building situation in Columbus is the attitude shown by projectors of commercial building. Many large projects which were held in abeyance for two or three years are now being pushed and some have been started to be completed before the first of the year. Among the larger commercial projects are the new building for the Ohio State Journal, a local newspaper, to cost about \$200,000; the new structure of the Franklin Building and Savings Association on East Main St., to cost about \$115,000; two plants for the National Ice and Storage Co., to cost about \$240,000; a wholesale grocery for George Bobb & Sons Co., on North Front St.; an addition to the wholesale grocery plant of the G. W. Bobb Co., on Naghten St.; two automobile sales rooms on East Broad St., to cost about \$300,000, and the erection of an addition to another garage in the same vicinity.

Pennsylvania

The Cyrus Borgner Co., North Twenty-third Street, Philadelphia, Pa., manufacturer of fire brick, had an interesting exhibit in connection with the showing of Philadelphia-made goods at the First Regiment Armory, September 8-13.

The Clarion (Pa.) Coal & Clay Co. expects to have its plant on the Millcreek branch of the Lake Erie, Franklin & Clarion Railroad, ready for operation by the middle of November. The concern is capitalized at \$300,000. C. H. Lehman, of Philadelphia, is president. The company will manufacture drain tile and building and paving block, as well as building brick.

John S. E. Pardee & Co., Heed Building, Philadelphia, has been offering a quantity of 2,000,000 brownstone high grade pressed brick at \$16 per thousand, f. o. b. railroad siding at Reading, Pa. This company specializes in the line of high grade red, gray, buff and other color face brick, representing the Mack & Pennsylvania Clay Works in this section. Common brick is also handled by the company, which does a large business in these burned clay products.

Frederick Binder, Allentown, Pa., who for some years conducted a brick manufacturing plant in the western part of Emaus, Pa., with his two brothers, is planning for the reopening of the plant early next spring. The yards have been shut down for a few seasons past. It is planned to repair and improve the works during the winter season, including kilns and other departments, having the plant ready for service for capacity production in 1920.

The Lock Haven (Pa.) Fire Brick Co., thru its recent acquisition of the Lock Haven Mining Co., has secured a

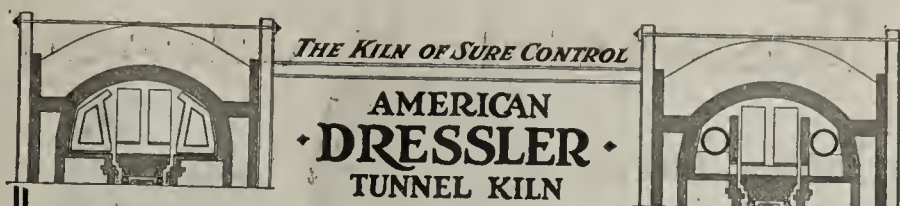
considerable area of valuable block flint clay, as well as coal properties at Farrandsville, Pa. The company is said to be planning for extensive operations in this district. G. T. Stowe, son of C. B. Stowe, president of the Stowe-Fuller Co., Cleveland, Ohio, manufacturer of fire brick, is secretary of the Lock Haven Fire Brick Co.

All grades of brick will advance in price within the next 60 days unless the labor situation materially improves in the meantime, according to Pittsburgh manufacturers. They declare that labor is being attracted from the brick yards to the mills owing to the big wages now being paid in the steel industry. Within the past six months, according to conservative estimates, 5,000 brickmakers have availed themselves of the higher wages offered by other industries in the Pittsburgh district. Subsequently the brick industry is now laboring under a serious handicap, and will be forced to advance prices unless the labor situation is improved.

There is a fair call for building brick at Philadelphia and vicinity, a slight decrease in demand being noticeable on account of the slack in building operations brought about by the bricklayers' strike. Face brick is operating under a good call with prices holding firm. Good hard common brick is now selling for \$19 per thousand locally, delivered on the job, and salmon varieties are ranging around \$16. Face brick is quoted at from \$38 to \$45 per thousand, depending on quality, Kittanning greys and buffs varying from \$38 to \$44, and the manganese to \$45. Fire brick is selling for \$70 per thousand for first quality material; partition tile ranges from \$89 per thousand upwards in price, with good prevailing call at the present time. Hollow building tile is selling from \$60 for small size to \$150 and \$160 per thousand for larger sizes.

The demand for brick, terra cotta and other clay building materials has at no time been so widespread as at present, according to representatives of the industry in the Pittsburgh district. Every city in the United States east of the Rockies is demanding clay building materials. In fact the demand by far exceeds the production and shipments, and the car and labor supply in this part of the country is so critical that many big plants have practically suspended operations. Of the approximately 7,000 new houses to be built in the immediate Pittsburgh district as a result of the "Build-a-Home" campaign, 65 per cent. will be constructed of brick. Everything possible is being done to have the railroad car supply increased so that work on these houses might be started without further delay. A committee of brick manufacturers from the Pittsburgh district is now in Washington conferring with Director General of Railroads Walker D. Hines in the hope of having the car supply increased. Their appeal will be supplemented by a letter from Mayor E. V. Babcock urging immediate action by Mr. Hines in view of the exorbitant rents and the fact that thousands of new families, attracted to Pittsburgh by the war industrial activities, are experiencing living conditions that constitute a menace to life.

Construction work at Philadelphia, which recently seemed destined to move along at top speed, is slackening a little, and recent weeks show a decrease in the volume of permits issued. Unquestionably, the current labor situation is responsible for this set-back, and it is currently stated that the bricklayers strike, prevalent for the past few weeks, is responsible for about 75 per cent. of the decrease. There is no change in conditions at the present writing, and just what the outcome will be is rather uncertain. Construction work, however, has not been entirely throttled, and a good volume of building permits has been issued for brick and



PENNY WISE AND POUND FOOLISH

is the man who continues
to pay more to

BURN BAD PRODUCT

than to

BURN GOOD PRODUCT

American Dressler Tunnel Kilns, Inc.
171 Madison Avenue
New York City



Bituminous COAL Particularly Adapted To Burning Clay Ware

...

INDIANA BLOCK

Three Operations in Clay County, Indiana, on Monon R. R. Capacity, 3,000 Tons per day.

...

INDIANA Number 4

Three Operations in Green County, Indiana, on Monon R. R. Capacity, 3,000 Tons per day.

...

Both burn with long flame, are very low in sulphur, and leave a flaky ash.

Tell us your requirements

POWER COAL COMPANY

FISHER BUILDING :: :: CHICAGO
Traction Building, Indianapolis, Ind.
Terre Haute, Ind.

Rossendale-Reddaway

FABRIC BELTS
for
EVERY
SERVICE



Spend thought as well as money on the belting you buy

Too often a belt is merely A belt rather than THE belt. There's a lot more to the right belt than width, length and price—though, at that, the right belt is always cheapest in the end. Every drive has its own problem—which must be solved correctly to get efficient work from the belt. Rossendale-Reddaway makes fabric belts of all types for every service—not merely one belt which can give more or less efficiency depending on the conditions of the drive. It is in this ability to supply the

RIGHT BELT FOR THE PARTICULAR DRIVE

that the Rossendale-Reddaway line of fabric belts has the advantage.

Ask our engineering department for recommendations for your difficult drives. Their advice is competent and free.

The Rossendale-Reddaway Belting & Hose Company
Newark, N. J. 2002-R

SINCE 1890
SOLE MAKERS OF

 **CAMEL HAIR BELTING**
REG. U. S. PAT. OFF.
MADE IN THE U. S. A.

other structures. Factory work is assuming rather an important status, and with a total estimated valuation of \$740,000 for buildings of this class in August, the present month bids fair to round up an equally large total. Two and three-story brick dwellings are also holding their own, and a goodly quantity of plans for building of this type has made an appearance. Among the industrial buildings now under way are a two-story brick factory, 60x70 ft., at Tacony for L. H. Gilmer & Co., manufacturers of belting, and a new three-story brick addition to the plant of the Keystone Wagon Works, 75x100 ft., with wing, 60x74 ft., at Second and Norris Streets.

Pennsylvania brick manufacturers are greatly disturbed over the announcement by State Highway Commissioner L. R. Sadler, that the entire road building program of the state will in all likelihood be suspended owing to the embargo on stone shipments ordered by the United States Railroad Administration. The federal order will affect road work all over the United States, it is feared, and will find an alarming reflection in the brick industry. If it is of long duration, as is now threatened, paving brick manufacturers will be forced to make better grades of brick, and this, in turn, will result in a dearth of brick required for all road work. It is reported in Pittsburgh that large brick contracts already are being cancelled, because without the ballast stone contractors are unable to go ahead with their road work. Pennsylvania's road-building program involves 1,000 miles of road construction programs to be initiated all over the United States, according to well informed brick men in Pittsburgh, manufacturers have been operating their plants with double shifts in order to cope with the demand. Stoppage of the road work, however, will mean losses of millions of dollars to the trade, and general confusion in the industries embracing clay products.

Tennessee

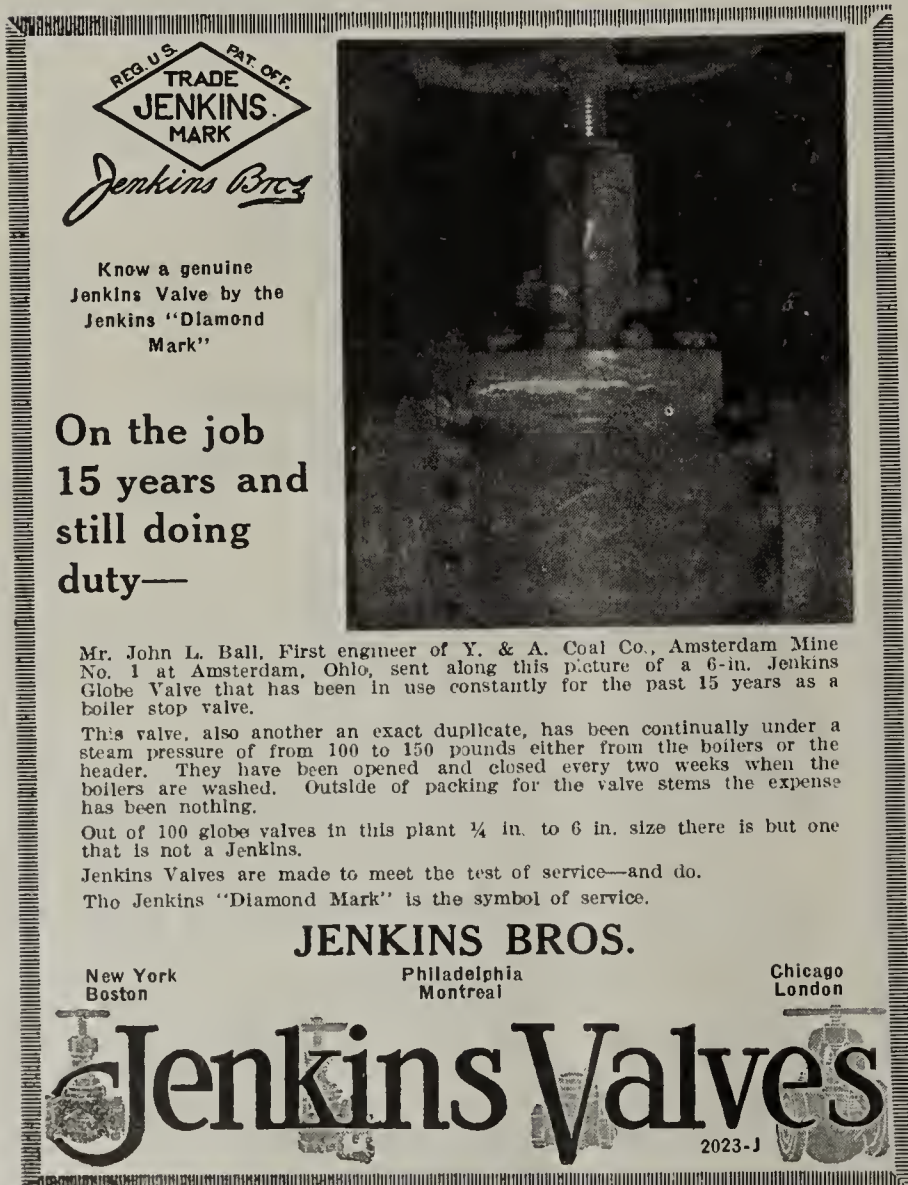
A number of brick buildings are being pushed to completion at Memphis, Tenn., this month and several others are just being started. Late autumn and winter work promises to be on a good scale, tho residential construction is still of a modest character compared with former years. The market is firm and somewhat strong on fancy brick and common brick and good on terra cotta and sewer pipe.

The Belmont Candy Co., Inc. at 78 East Virginia Ave. Memphis, is now ready to start the construction of a new factory at Colorado Ave. and Kansas St. to cost \$150,000. The structure will be 102x120 feet, made of brick and reinforced concrete. It will be three stories in height with a basement. Work on the building will be started in ten days by the Jas. Alexander Construction Co. R. R. Floyd is president of the company and H. L. Bettz, manager. Their candy business has grown very considerably in the last few years.

Texas

C. J. Browning, of Fort Worth, Tex., and associates have organized the Adamant Products Co. and will build a plant for manufacturing ornamental brick and tile at Niles City, near Fort Worth. The proposed plant will cost about \$25,000. It will use a patent process for manufacturing brick and tile out of sand and chemicals.

It is reported that the Coleman (Tex.) Brick Co., which has been inactive for some years, has been sold to a New York concern. This plant will be enlarged and equipped with new machinery necessary for the output of building and paving brick as well as drain tile, etc. Contiguous to



REG. U. S. PAT. OFF. TRADE MARK
JENKINS BROS.

Know a genuine Jenkins Valve by the Jenkins "Diamond Mark"

On the job 15 years and still doing duty—

Mr. John L. Ball, First engineer of Y. & A. Coal Co., Amsterdam Mine No. 1 at Amsterdam, Ohio, sent along this picture of a 6-in. Jenkins Globe Valve that has been in use constantly for the past 15 years as a boiler stop valve.

This valve, also another exact duplicate, has been continually under a steam pressure of from 100 to 150 pounds either from the boilers or the header. They have been opened and closed every two weeks when the boilers are washed. Outside of packing for the valve stems the expense has been nothing.

Out of 100 globe valves in this plant ¼ in. to 6 in. size there is but one that is not a Jenkins.

Jenkins Valves are made to meet the test of service—and do.

The Jenkins "Diamond Mark" is the symbol of service.

JENKINS BROS.

New York
Boston
Philadelphia
Montreal
Chicago
London

Jenkins Valves
2023-J

the plant there is an excellent supply of fine shale. Gas will be used as fuel.

Virginia

The Salem (Va.) Brick Co. is doing a very good business at the present time, according to H. R. Gurden. The company has recently purchased a steam shovel, set of conical rolls, and erected seven brick houses for its workmen. G. E. Pierpont, who has served in the army during the period of the war, is now back on the job as secretary-treasurer of the company.

C. H. Locher, Jr., of the Glasgow (Va.) Clay Products Co., states that the company now has under construction three additional kilns and that they expect to increase their capacity from 20,000 to 30,000 brick per day during October. The concern is working up a good business in rough texture brick, mingled shades and all reds. They have been told that their shale is one of the best in the Southern States and suitable for hollow ware, and it is their intention to do some experimenting with drain tile during the coming winter. The company is building five dwelling houses for its employees.

The South Richmond (Va.) Brick Works, operated for a number of years as a private concern, was recently bought by a corporation and will be operated under the name of the Southside Brick Works, Inc. A charter has been issued providing for a maximum capital of \$60,000 and a minimum of \$30,000. E. A. Stumpf is president of the new corporation; E. A. Stumpf, Jr., secretary, and J. J. Boehling, treasurer. Improvements are to be made at the works, which in all probability will be enlarged to a great extent.

R. W. Payne, manufacturer of a good quality common red building brick, operating a plant of 20,000 daily capacity at Drakes Branch, Va., states that business is very good in his territory and that he cannot begin to make as many brick as he can sell. Mr. Drake has recently installed new and heavier machinery and has put in a Bernard gasoline shovel to dig clay. He has built a new up-draft kiln of 300,000 capacity, to burn coal, his old kilns burning wood. P. J. Payne, who has been serving in the regular army, is now in business with his father.

West Virginia

The Huntington (W. Va.) Brick & Tile Co. has been incorporated with a capital of \$150,000, by T. M. Davidson, J. J. West, C. A. Howell, L. I. Davidson and D. A. Shepherd, to manufacture brick and tile.


Wisconsin

Louis E. Meir, distributor of brick, tile and terra cotta in LaCrosse, Wis., reports a very good business for brick and hollow building tile thruout his territory for the past season. He has furnished some large jobs this year on both these materials and anticipates closing several good size orders before the season ends. Sales on face brick have run very high this season and business conditions in general were never better than they are now.

Ross C. Purdy to Develop and Promote New Superior Refractories

Born in the palacial home of a successful country cross-road doctor, but of parents well educated in both liberal and fine arts, the fourth child in a family of ten children, five boys of whom lived to manhood and became educated in the

WATERBURY ARMORED ROPE



IN STEAM SHOVEL WORK

THIS is another service in which wire ropes are subjected to unusual strains and wear. The dust and grit raised in digging operations of this character is exceptionally hard on ropes. The Clay Products Company of Brazil, Indiana, is using Waterbury Armored Rope on their shovels with the result described by them, as follows:

"Referring to your issue of November 4th, we are advised that your 1 x 1 1/2 size Waterbury Armored Rope is giving us about 100 days' service against 60 to 80 days' service from an ordinary wire rope. We find it a very satisfactory cable and are using the same construction of rope on our smaller shovels to as good an advantage as the larger rope is giving."

WATERBURY ARMORED ROPE

FLOW STEEL

WATERBURY ARMORED WIRE ROPE

Gore Patent, March 14, 1911

3 Strands, 37 Wires to Strand, 1 Hemp Core

The same of 36 wires should be based on the outside diameter of rope

Strand Diameter	Strand Circumference	Approx. Weight Per Ft.	Approx. Breaking Str. Per Ft.	Approx. Length of 1 Ton	Approx. Price Per Ft.
3/8 x 3/8	1.05	14	3	\$0.33	
1/2 x 1/2	1.40	21	4	.46	
5/8 x 5/8	1.65	27	5	.51	
3/4 x 3/4	2.23	35	7	.71	
1 x 1	2.71	44	9	.86	
1 1/8 x 1 1/8	3.33	55	11	1.05	
1 1/2 x 1 1/2	3.95	66	13	1.24	
1 3/4 x 1 3/4	4.57	77	15	1.43	
2 x 2	5.19	88	17	1.62	
2 1/4 x 2 1/4	5.81	99	19	1.81	

Waterbury Armored Ropes are made in all sizes and are available in all parts of the world. For full particulars, send for our "Waterbury Armored Rope Handbook" which is free of charge.

The convex edge of the flat wire armor

is the exclusive (Gore patent) feature which makes Waterbury Armored Rope superior to other protected strand ropes. Those convex edges allow all the free movement and flexibility of the same size of bare wire rope, with no possibility of the armor-wire riding up on itself in service or becoming loose. Thus constant protection for the wire strands is assured.

The Waterbury Rope Handbook tells you all about this—and every other kind of rope. It's free. Ask for a copy.

WATERBURY COMPANY

63 PARK ROW, NEW YORK

Chicago, 1315-1321 W. Congress St.
San Francisco, 151-161 Main Street

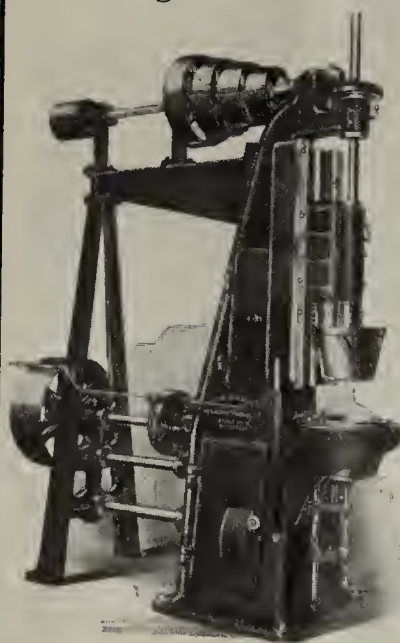
New Orleans, 1018 Maison Blanche Bldg.
Dallas, Texas, A. T. Powell & Company
2336-W

Baird Pottery Machine

"a money maker, and successful in every way."

Many clay men are profiting by the manufacture of Flower Pots, either as an important department of their plant, or as a money making side line.

The Western Pottery Company, Denver, Colorado, does a large and profitable business making Flower Pots on the Baird Pottery Machine.



This company says that machine has proven very satisfactory. "It makes a nice looking pot and gives us a very much increased production. We consider it a money maker, and successful in every way."

With the latest model Baird Machine, manufacturers are moulding Stone Ware, Insulators, Runner Brick, Crucibles, etc. These products have a wide market. Profits are substantial.

Let us explain this proposition more fully to you. Send along a sample of your clay.

BAIRD MACHINE & MFG. CO.
6569 Jefferson Ave., Detroit, Mich.

"We have been using at our two factories for the past year, Barium Carbonate made by the Rollin Chemical Company. This material is used to prevent scum and has proved entirely satisfactory."

THE UNITED STATES ROOFING TILE CO.
5-15-18

IMPROVE YOUR WARE

It can be done by the use of Rollin's Barium Carbonate because it eliminates scum.

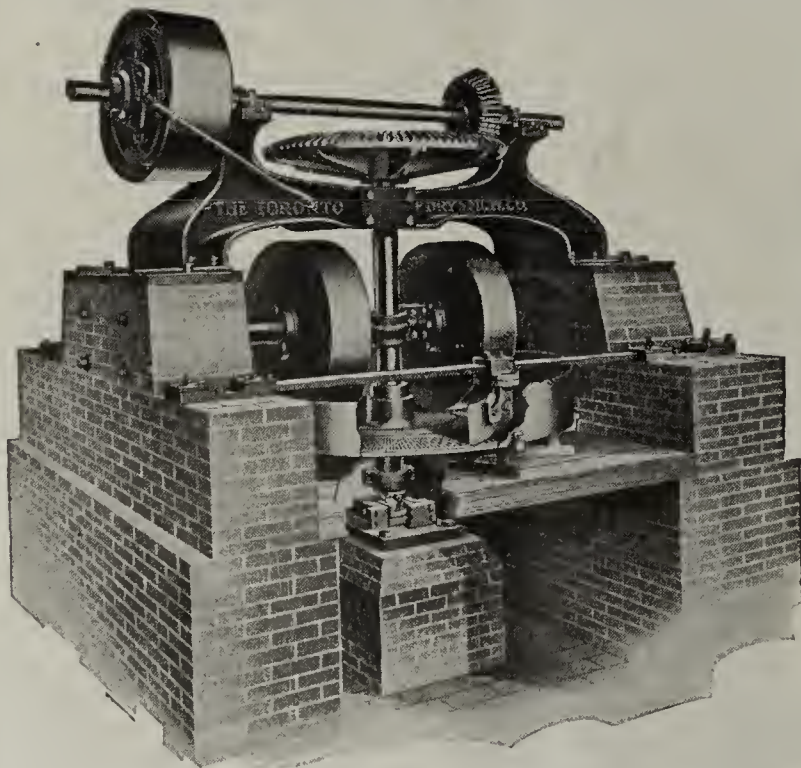
Just add it to your clay at the pug mill or dry pan and it will make the scum-producing salts insoluble and harmless to your ware.

Write us now.

The Rollin Chemical Co.
Charleston, W. Va.

BRICK MUST HOLD UP ITS REPUTATION

THE MEANS GRINDING PANS



For Grinding Wet, Semi-Dry and Dry materials. Made in sizes adopted by the best judges. We are in position to solve your grinding problems.

SINGLE, DUPLEX OR BATTERY INSTALLATIONS OF 8, 9 AND 10 FOOT PANS.

Write for Descriptive matter and prices on Pans Also Bulletins on Sewer Pipe and Tile Presses, Elevating and Conveying Machinery, Trucks, Barrows and other equipment for the clay products manufacturer.

THE TORONTO FOUNDRY & MACHINE CO.
Toronto, Ohio

professions of law, medicine, theology and ceramics, our own and only Ross C. Purdy, research engineer of Norton Co., Worcester, Mass., has won for himself in our midst a unique leadership in wholesome sports, song and laughter as well as a standing with the best in the technical, scientific and engineering mysteries of ceramics. No greater honor in ceramics has been conferred than has been and is being enjoyed by Mr. Purdy; professorship in a university, presidency of the American Ceramic Society, offers of directorship in Federal Bureaus and in universities and president of Ohio State Chapter of Sigma Psi, an honorary fraternity.



ROSS C. PURDY.

Characteristic of Purdy, he appeared for this initial interview with Professor Orton, as a candidate for a course in ceramics, with his right arm in a sling, he having the hour before badly sprained the wrist while breaking up a meeting of the freshman class into which by chance, he ran when enroute from the train to Professor Orton's office, five minutes after entering the University Campus for the first time.

He completed the short or industrial course in two years with several hours of additional credits. In the N. B. M. A. scholarship examination in 1908 he won the highest honors with a grade that was more than twice his nearest competitor thus earning opportunity for a limited amount of further university training.

At the close of the university year, 1899, Mr. Purdy entered the employ of the Mosaic Tile Co., Zanesville, Ohio, where he was advanced to the position of assistant superintendent. At that time the Mosaic Tile Co. was very small but it could boast of having two very active superintendents, each with strong opinions and personalities which harmonized like a canine quartette. Into this jazz combination our untrained assistant superintendent became the drummer's outfit; brass, snare, bells, triangles and all, and no jazz drummer's outfit ever received a worse beating. Our young Mr. Purdy was the bumper between the two superintendents.

After a little more than two years of interesting and beneficial service with the Mosaic Tile Co., Mr. Purdy spent two years in potteries making department store art ware and especially stoneware.

In 1902 he was honored by employment in the Ohio State University as laboratory assistant in ceramics at a salary of \$900 per year. This gave him opportunity to continue his university studies, and, in cultured environs, begin the training of his now rapidly increasing family. This magnificent salary left Mr. Purdy free to devote all of his time to teaching, studying and research, which he did with distinguishing success. He approached all work and every problem in his well known happy, optimistic, open minded but earnest manner. His rare intuition in seeing things scientific and his untiring physical energy together with his ever happy outlook under all circumstances, carried him thru three years of such service and studying. He was and is now as buoyant in research as in play, quick to see problems and to determine methods of solving them.

After three years at the Ohio State University our Instructor Purdy was called to University of Illinois to originate and to be the first instructor in the ceramic department. Here he served two years as assistant professor, giving part time to the Illinois Geological Survey. Aside from the strong department which he organized and directed in these two years, there stands as a monument to his technical and scientific ability, to his unusual physical energy, and to his skill as an organizer and director, a large amount of original research in several widely different ceramic lines. He has always been most vigorous in both mind and body but the best publicly known results of his ability were presented during these two years at the University of Illinois.

After working alone for two years, Mr. Purdy persuaded Albert V. Bleininger to leave Ohio State University and come to the University of Illinois. This left Professor Orton without trained assistance hence he in turn persuaded Mr. Purdy to return to the Ohio State University. The persuasion in the former case being salary and, in the latter, opportunity to complete work for a degree.

Our now Assistant Professor Purdy completed the requirements for a degree in ceramic engineering at Ohio State, graduating with the class of 1908.

During the next two years Professor Purdy was promoted successively to associate professor and professor, which latter title and position he had for two years. This last stay in the Ohio State University was for five years, he resigning his professorship in June, 1912, to enter the employ of Norton Co., as research engineer.

Having vision in things scientific and being practical in his applications, Mr. Purdy (please note the return to title of Mister at his request) has recognized the problems in refractories which are seriously retarding, and in some cases hindering the development of many industrial processes. Chemists, metallurgists and engineers are finding defeat in the development of time and money saving devices because of inadequate refractories. It is that he can have the time to develop and promote new superior refractories that Mr. Purdy decided last spring to withdraw from his position as research engineer in charge of technical control at the Worcester plant of the Norton Co. He will devote three-fourths of his time as consulting engineer to the users and producers of superior refractories. That he may be more centrally located, and be near the Norton Co.'s laboratories and electric furnaces in Niagara Falls, Mr. Purdy will locate this fall in Buffalo, his address there, for the while being 222 Anderson Place.

INSURANCE AGAINST FIRE At Actual Cost

The Manufacturers of Clay Products at Reciprocal Insurance Bureau, offers you an opportunity to come in and insure against fire with preferred risks that are of your own class and engaged in the same line of business. This Bureau saves you the expense of paying for (1) enormous overhead, (2) agents' commissions, (3) companies' profits. You are assured of greater safety, co-operative assistance of a practical kind, and better service.

A large Brick and Tile plant owner writes:

"We can truthfully say we have never had more prompt and satisfactory adjustment of claim than in this case."

Write us for rates and our plan to render better service and greater safety.

Manufacturers of Clay Products at
Reciprocal Insurance Bureau
29 S. LA SALLE ST., CHICAGO



Light steel rails

We saved the day for the Clay and Coal Operators in War Times by furnishing BUCKEYE MINE RAILS, whenever and wherever needed, and while many other Steel Mills were running exclusively on other material, you could not have operated without us at that time.

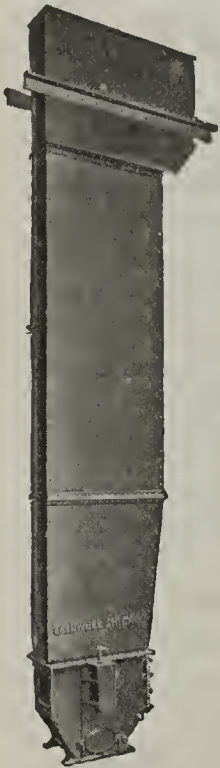
Now, in Times of Peace, we ask that you do not forget us, as we can, and will render the same unexcelled service, and furnish the same high quality of material. "Buckeye means best", and BUCKEYE LIGHT STEEL RAILS are better still. All sections from 12 lb. to 40 lb. inclusive always in stock for quick shipment.

Let us have your inquiries, and we will take the chance of developing them into orders on our books.

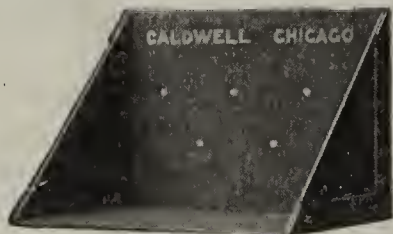
THE BUCKEYE ROLLING MILL COMPANY
STEUBENVILLE, OHIO

ELEVATING MACHINERY

FOR
BRICK & CLAY
PLANTS



Complete bucket elevators with or without steel casings, buckets fitted to chain or belt. Shelf buckets, standard steel buckets, malleable buckets,—chain, etc.



H. W. CALDWELL & SON CO.
CHICAGO, 17th St. & Western Ave.

NEW YORK
50 Church St.

DALLAS, TEX.
709 Main St.

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

International Forging Ahead

Demands for larger increased productive capacity, due to an increased business in clay machinery and industrial cars, have recently been followed by a merger of the International Clay Machinery Co., of Dayton, Ohio, with a large Cincinnati corporation.

This is of special interest to the clay products manufacturer, as it means that better deliveries will be made on orders, as a large number of machine tools have been brought to Dayton from Cincinnati, this greatly increasing the capacity of the plant. Several additional new machines have been added and others will shortly be installed. In fact, one of the machines just being placed in operation is the largest of its kind in the Miami Valley.

International has steadily been forging ahead in the design of brick and tile machinery, a new distinctive type of auger machine having recently been announced in these columns. As shown in the illustration, this machine is original in its design, as there are but two main castings, shafts and gears. Further, the outboard bearing instead of being bolted to the base, as has been the custom heretofore, is cast



Auger Machine for the Manufacture of Brick and Tile.

as an integral part of the frame, insuring perfect alignment of the shaft at all times. Other machines of advanced design will soon be announced.

A fifty-two page catalog covering industrial cars of all types, trackage, switches, etc., has just been printed, as International has been doing a lively business in this line, especially on annealing cars and cars for railroad tunnel kilns.

The new company is also engaged in the manufacture of sugar machinery, practically all of which is on foreign orders.

The merged company is capitalized at nearly a million dollars. R. H. McElroy, who needs no introduction to the clayworker, is vice-president and general manager, while E. J. Anderle is his assistant in the clay machinery and industrial car department.

✻ ✻ ✻

War's End Puts Stanley Belting Again on U. S. Market

The signing of peace at Versailles and resumption in Great Britain of Peaceful manufacturing activities has been followed by the announcement that Stanley Solid Woven Cotton Belting is again available for use in the United States.

Stanley, a cotton belt of special weave, largely used here, has virtually been off the market since the beginning of hostilities. A supply was available in this country at that time, but when that was exhausted little effort was made by the Stanley Belting Corporation of Chicago, the American distributors, to increase their market. This was due partly to the fact that the mills where the belting is made, were turned over to the British Government for war work, and partly to the difficulty of shipment, the result of the scarcity of ships and to Germany's unrestricted submarine campaign.



VOLUNTEER

for the Third

RED CROSS ROLL CALL

Opportunity, Privilege, Duty confront YOU. The personal service of a million volunteers is needed November second to Armistice Day, the eleventh, to enlist every citizen in the world's greatest Army of Mercy.

Hopeful, grateful America appeals for the Red Cross spirit.

It is interesting to note in connection with the announcement, that the signing of peace marks a new epoch in the history of the concern which has been engaged in the manufacture of Stanley Solid Woven Cotton Belting for more than a hundred years. The original Frank Stuart Sandeman was a weaver of cloth. His home at Stanley, in the gateway of the Scottish Highlands was the center of the weaving industry for which the Scots have been famous for centuries.

Sandeman was a weaver of cloth, but when exploitation of the Scots forests began he turned his attention to belting. The fact that the Scots pin their faith in woven goods coupled with the fact that the atmosphere is damp was responsible for the development of the belt as it exists today. The special weave was developed after extensive experiment and looms were designed and built. Finally when the work of preparation was complete, Sandeman sent teams thru the country bringing the Scottish farmers and shepherds to work in his mill. They came by families, settling at Stanley on the Tay River, the site picked because of its water power facilities.

Many of the descendants of these original employes still are employed at the Stanley mills and at the Manhattan Mills operated by the company at Dundee. The process and the works still are in the possession of the descendants of the original Sandeman, the firm now operating under the name of Frank Stuart Sandeman & Sons.

The mill at Stanley, having discarded the water power long ago, now is one of the most modern textile mills in the world, every piece of machinery, every manufacturing method is the last word in modernity. The mill virtually "owns" the town of Stanley. Electric current, generated at the Stanley plant lights the town—one of the few towns of its size in Scotland, by the way, having electrically illuminated streets—children of the workers are educated at schools built by the company; an athletic field built by Stanley furnishes recreation and even the jail is the property of the Stanley Mills.

With England speeding up her industries under the pressure of war, the Stanley Mills for the last four years have been extremely busy filling war contracts for Stanley Belting. Not in the factories only, but in the field as well the belting was used by the Government in enormous quantities. This was particularly true in the big munition plants thruout the United Kingdom.

Before the war its use was scarcely less general in the United States and even during hostilities Stanley found it possible to keep its old customers supplied. Now however, with large supplies again available it will be possible to fill orders for the solid woven cotton belt which could not be filled before.

✱ ✱ ✱

New Lancaster Catalog

A sixty-page catalog has just recently come from the press for the Lancaster Iron Works, Inc., Lancaster, Pa., showing in considerable detail the equipment manufactured by this company used in the production of brick by the soft mud sand molded process.

The first few pages give views of the machine shop, plate shop, etc., and telling of the general facilities of the plant to take care of any requirement for clayworking machinery.

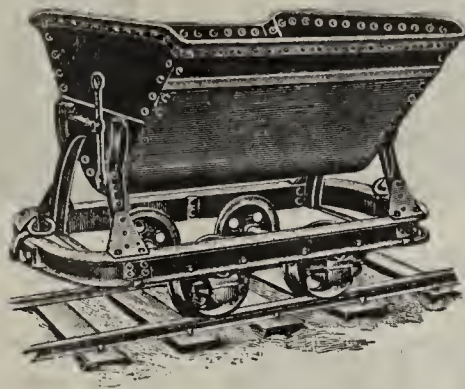
Then the catalog takes up in turn each step in the manufacture of clay ware, the mining and preparation of the clay, molding the brick, drying and burning. Space is devoted to the shipping facilities of the company, its engineering department, repair department, and the main part of the catalog illustrates and describes the different machines.

Jas. P. Martin is manager of the clayworking and foundry machinery department, and will be glad to send a copy of the catalog on request.

✱ ✱ ✱

Addition to Barber-Greene Factory

The Barber-Greene Co., Aurora, Ill., recently began work on the construction of a 180x90 ft. addition to their factory. The constantly increasing demand for B-G Standardized Material-Handling Machinery, B-G Belt Conveyors and B-G Self-Feeding Bucket Loaders has made this added room necessary in order to furnish prompt deliveries. This is the second time this year that additions have proved necessary in keeping up with orders.



Biehl "V" Dump Cars

For more than sixty years Biehl Dump Cars have been giving dependable and economical service to manufacturers.

Biehl Cars are made in certain standard types. In addition thereto, we build cars from specifications where peculiar conditions call for special designs.

We also manufacture Platform and Dryer Cars, Dump Buckets, Barrows and other equipment. Our catalog No. 8C is just off the press. Ask for a copy.

THE BIEHL IRON WORKS, Inc.

Office and Works, Reading, Pa.

Branch Office: Detroit, Mich., 725 Ford Bldg.

Wonham, Bates & Goode, Inc.,

17 Battery Place, New York City



BUCYRUS



For Digging Shale

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Producer Gas and Gas Producers.....	4.00
Refractories and Furnaces.....	4.00
Rock Excavation, Handbook of.....	5.00
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Scumming and Efflorescence.....	.50
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The new building will be used as the assembly department and will be modern thruout. Reinforced concrete with continuous sash windows, steel trussed roof, railroad track and loading platform inside walls are a few of the features incorporated in the design. The Federal Bridge Co., of Waukegan Wis., was awarded the contract for the steel work and the remainder is being done by the Barber-Greene Co. themselves. It is hoped to have this work finished within sixty to ninety days.

* * *

The "Ironclad-Exide" Battery

A very interesting little booklet has just been issued by the Electric Storage Battery Company, entitled, A Sketch of the Development of the "Ironclad-Exide" Battery. This booklet is of practical interest to those clay-products manufacturers who are using or contemplate using storage battery trucks or tractors of any kind.

The usefulness and reliability of the electric truck or tractor is very surely dependent on the storage battery which furnishes the power to propel the car. It is therefore of primary importance that the clay-products manufacturer give carefully study to the battery that is to be used, before purchasing equipment of this kind.

This little booklet, which is written in a very clear style and well illustrated, will be sent by the Electric Storage Battery Co., Philadelphia, on request.

* * *

Derleth to Represent Celite

In order to care for the increasing demands for Celite Products (Sil-O-Cel for heat insulation and Filter-Cel for filtration) the company has appointed Chas. P. Derleth to represent their interests in the St. Louis territory.

Previous to his enlistment fourteen months ago in the chemical Warfare service, Mr. Derleth was sales representative of the J. B. Ford Company at Wyandotte, Mich. He is a graduate of the University of Illinois.

* * *

Will Design Asbestos Plants

The K-B Pulverizer Company, 92 Lafayette Street, New York City, have inaugurated a new department for the design and equipment of asbestos products plants.

They are in a position to submit plans and estimates and supply machinery for the manufacture of all asbestos products.

* * *

The William E. Dee Co., 30 N. La Salle Street, Chicago, Ill., have two foundries and machine shops for the manufacture of sanitary castings. They are also making dryer cars, dies and other castings in either grey iron or semi-steel for use in their own clay plants.

In order to assist in the increased demand for this kind of work, they will take on the manufacture of these articles for other clay plants, and are in position to quote prices on any demands that may be made of them, finished and completed.

* * *

The Bucyrus Co., South Milwaukee, Wis., announce that they have opened a Cleveland office at 808 American Trust Building, Cleveland, Ohio. This office will be in charge of E. G. Lewis, formerly with the New York office of the Bucyrus Co. and more recently president of the New Jersey Slag Products Co., Dover, N. J. Mr. Lewis has had long and thoro experience with contracting and excavation work of every description.

* * *

The Osgood Co., Marion, Ohio, have recently established an office at 1109 Land & Title Building, Philadelphia, Pa. W. W. Houston will be in charge.

* * *

Bulletin No. 266, recently issued by Walter A. Zelnicker Supply Co., St. Louis, Mo., is free to the trade.

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American Clay Machinery Co.	715-716
American Dressler Tunnel Kilns, Inc.	653
Arnold-Creager Co.....	710
Atlas Powder Co.....	643

Baird M. & Mfg. Co.....	706
Ball Engine Co.....	703
Barber-Greene Co.....	698
Biehl Iron Works.....	705
Bonnot Co.....	644
Bristol Co.....	696
Broderick & Bascom Rope Co.....	696
Brookville Truck & Tractor Co.....	720
Brown Instrument Co.....	662
Buckeye Rolling Mill Co.....	702
Buckeye Traction Ditcher Co.	711
Bucyrus Co.....	709

Caldwell Co., Inc., W. E.....	697
Canton Grate Co.....	702
Celite Products Co.....	696
Chambers Bros. Co.....	725
Chase Fdry. & Mfg. Co.....	720
Chattanooga Paint Co.....	694
Classified Ads	729-730
Cling-Surface Co.....	700
Conkey Co., H. D.....	701
Crescent Belt Fastener.....	695

Davenport Locomotive.....	718
Dee Co., Wm. E.....	697
Dering Coal Co., J. K.....	723
Didier-March Co.....	648
Dodge Sales & Eng. Co.....	650
Dover Fire Brick Co.....	694

Electric Storage Battery Co.	656
Engelhard, Chas.....	652
Erie Steam Shovel Co.....	703
Exner, J. E.....	697

Fate-Root-Heath Co.....	731
Flexible Steel Lacing Co.....	707
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Goodman Mfg. Co.....	721
Goodyear Tire & Rubber Co.	649

Hardinge Bros. Inc.....	695
Harrington & King Perforating Co.....	705
Hendrick Mfg. Co.....	719
Hiertz Metal Co.....	698
Hill Clutch Co.....	695

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

America's Menace

THESE COLUMNS in the past have usually and largely been devoted to discussion of trade practices, manufacturing problems, sales ethics, and other similar themes of vital interest to the clay products manufacturing industry. We have pursued this policy because we have felt that when a clayworker reads his trade paper, he wants to learn about his business. Opinions galore on every topic of the hour may be found in a multiplicity of other mediums, national and general in their circulation, and so far we have refrained from devoting much space to this kind of matter. *However*, present day events as they relate to business and to the clay products manufacturing industry force us to give them serious consideration.

RADICALISM RAMPANT

Never before have we seen radicalism so rampant. We find it in the ranks of labor, in our universities, colleges and schools, and even in the pulpit.

You need very little enlightenment upon the prevalence of socialism, radicalism, syndicalism, bolshevism, and anarchism among the working people of the nation. Exponents of these lawless creeds have migrated to our shores like so many vermin from infested European soil. They possess no fire-side. Work is their greatest aversion. Sad to relate, their teachings have found soil in the hearts of some of America's workmen, who, tho they live "in the land of the free and the home of the brave" and enjoy its privileges, usually lack the essential item of citizenship papers.

THE CURE

There is only one cure for this kind of thing. It is expulsion of the preachers of the creed of lawlessness. If America is to survive the trying days that are before the whole world and if its government is to weather safely this

brewing storm of anarchy, radicals must be collected up like so many undesirable pests and shipped back to the old world from whence they came. This is not a moral reform. Knowing the hearts of men as we do, we are not strong for that milk and water stuff. What we support is simply a step in the maintenance of law and order.

THE BOLSHEVIST PROFESSOR

But we must go farther than the fellow on the soap box who is waving the red flag, if we are to eradicate the disease. Our national and social house cleaning should not overlook the seats of learning. There we find professors teaching the soul-destroying doctrines of Lenine, Trotsky, Marx, Emma Goldman and the rest of their tribe. These professors are a far more serious aspect of America's menace than the bewhiskered, disheveled street corner extremist. They poison the awakening intellect of America's young manhood and womanhood with doctrines entirely foreign to the homes from which they have come and to the families from whose line they have descended.

EARLY COLLEGE DAYS

There was a time in the history of this country when the college as an institution was in the hands of spiritual men. They came from the same stock as those who wrote the Declaration of Independence, the Constitution of the United States, the Monroe Doctrine, and other history-making papers. These pioneer colleges taught purity in life and walk, fear of God, and the greatest respect for law and order. The seeds of bolshevism were never sown there. Our forefathers knew something of the rottenness of the old world social order. They had fled from European ecclesiastical and political intolerance. They knew that no good thing could come out of what was formerly the domain of the old Roman empire.

The radical teaching professor is simply the dupe of old world philosophy. He is absolutely wrong. He is worse than that, he is

dangerous. If our schools of learning are to be a safe place to which to send our young people, the bolshevist professor must go.

THE SOCIALISTIC PULPITEER

But the saddest part of our story is the prostitution of the pulpit to the cause of socialism. For instance, in an Associated Press dispatch on October 3rd, which was an account of the Interchurch World Movement's Industrial Conference, in New York, a certain reverend sir was reported as follows:

"He called socialism a 'protest on behalf of the workers against their conditions of living.'

" 'The one big union is the belief of essential solidarity of all those working in the establishment and should not be quoted as meaning something of a bloody nature,' he continued. 'In the names of St. Francis of Assisi and of Savonarola, who fought the battle for better social conditions so many years ago, *I say we should ask ourselves whether or not we should recognize the radical movement of today and find the good qualities in it.*' "

Poor fellow! He certainly has wandered far afield. From a minister of the Gospel he has gone to a wavering apostleship of socialism. He has failed in his mission. He is false

to his calling. The message of Christianity and that of socialism are as different as night is from day. The socialist says, "What is thine is mine." The proper attitude of the christian should be "What is mine is thine."

If there ever was a time that you as a business man, *not as a capitalist*, ought to be on your guard, it is now. To be engulfed by the false teachings of the hour is to court disaster, not only for yourself and your business and your family, but the very government of the United States. Treat your men fairly and squarely. Insist upon an honest day's work for an adequate day's pay. This does not mean six hours a day, five days a week. Oust the radical from your plant organization. Put him out forthwith, straightway, and uncere- moniously.

"Nail" the bolshevistic professor and teacher. Many of you are members of school boards and perhaps are interested in administration of colleges or universities. Find out what is being taught and insist upon respect for American institutions.

The preacher will need watching too. If he has strayed so far from his great theme as to resort to an advocacy of radicalism he ought to be silenced.

Lloyd George Predicts British Ruin Through Fatal Fallacy of Labor Policy and Refers to British Labor as Belligerent and Defiant.

"This spirit is the root of all evil," he says, "and unless, and until, labor examines and presents its grievances in a new spirit, there will never be a satisfactory answer to the problem of production. All shoulders to the wheel."

Lloyd George insists that only in increased production and decreased consumption will there be salvation for Britain, and further urges this message on all—"PRODUCE! PRODUCE! PRODUCE!"

**DON'T LET US GET
IN ENGLAND'S FIX**

The President to the Public

Burdensome Cost of Living
Must Be Decreased by

INCREASED PRODUCTION, ECONOMY, SAVING

"Only by keeping the cost of production on its present level, by increasing production, and by rigid economy and saving on the part of the people can we hope for large decreases in the burdensome cost of living which now weighs us down."

"Increases in wages certainly result in still further increasing the cost of production, and, therefore, the cost of living."

'TRUCE' VITAL TO PUBLIC

"Demands unwisely made and passionately insisted upon at this time menace the peace and prosperity of the country as nothing else could, and thus contribute to bring about the very results which such demands are intended to remedy."

"It is the duty of every citizen of the country to insist upon a truce in such contests until intelligent settlements can be made, and made by peaceful and effective common counsel."

WOODROW WILSON.

ACID TEST *for* BRICK *as a* ROAD MATERIAL

United States Bureau of Public Roads Undertakes Practical Investigations to Determine Whether a Limit Should Be Placed on the Size of Motor Trucks or the Loads Carried; Whether Improvement of Springs or Redistribution of Weights is Desirable; and Whether, for the Salvation of our Roads, the Lately Advocated Large Size Pneumatic Tires Should be Substituted for Solid Tires

By Waldon Fawcett

WITHOUT ANY UNDUE BLARE of trumpets, the United States Bureau of Public Roads has entered upon a series of practical investigations and demonstrations that may be appropriately referred to as an acid test for brick as a material for paving and highway construction under modern conditions of traffic. In this tail end of that last sentence, we have, it may be emphasized, the keynote to the significance of Uncle Sam's newest activity. Fundamentally speaking, brick has long since justified its right to a large place in the sun of paving materials. The only trouble has been that the old status—supposedly established conditions—have been sadly upset by the advent of that new factor in highway transportation, namely motor truck traffic.

Right here we establish contact between the Government's current scrutiny of brick, and twentieth century conditions of highway traffic. For the first time, the federal experts have set out to analyze the behavior of the various types of brick paving under the pounding of heavily-laden motor trucks. It is not pretended, of course, that this is exclusively a try-out of brick paving. As a matter of fact the objective of the tests now in progress is an approximation of the damage which motor trucks do to highways. All the same, it is observed that brick is figuring more conspicuously in the tests than any other material.

SHOULD SIZE OF TRUCK OR LOAD BE LIMITED?

For the reassurance of any brick man that might have misgivings on the subject, it may be insisted that this is by no means a case where brick as a paving material is "on trial for its life." That is to say, there is not a particle of danger that if it is found that brick fares badly under maximum truck impact, the specialists who are sitting in judgment will decree that brick cannot measure up to the exactions of latter-day highway traffic and must be discarded. Truth to tell, the shoe is on the other foot. It is conceded that brick paving must be accepted as standard and the object of the lately inaugurated tests is to determine whether a limit should be placed on the size of motor trucks or the loads carried; whether improvement of springs or redistribution of weights is desirable; and whether, for the salvation of our roads, the lately advocated large size pneumatic tires should be substituted for solid tires.

While recognizing the fact that the outstanding responsibility of the present tests is to suit the truck traffic to

the best available types of highway construction rather than to seek some new type of absolutely truck-proof road we are bound to recognize also the ambition of the officials of the Division of Road Material Tests and Research to take this opportunity to determine conclusively just what types of brick highway are best suited to heavy traffic. For example, the testers will, when they get thru, know more than has been known heretofore regarding the which, when and why of subgrades. Comparative tests will be made on various kinds of subgrades, ranging from the well drained to the one in soft condition. Similarly, in the case of vitrified brick it will be possible to observe the influence exerted by different types of joint fillers and bedding courses. By the by, brick paving will have a chance to indicate how it "stands up" under scientific scrutiny as against stone block and concrete.

Excellent progress is being made with the testing program that is under way, but it will probably be well into next year before conclusive results are announced. Meanwhile, brick men who are specially interested may be able to get pointers on specific angles of the subject. I happen to know that certain tire manufacturers are, with similar motives, keeping close tab upon these tests for the sake of their influence upon tire construction and practice. The tests are being carried on at the experiment farm of the United States Department of Agriculture located at Arlington, Va., just across the Potomac River from Washington, D. C., and here there has been devised and constructed a "plant" very ingeniously arranged to stimulate varied road conditions and the pummeling imparted by the sprung and unsprung weight of trucks.

The tests first to be inaugurated are, perhaps, of less manifest interest to the brick industry than those that will come later. For this initial series there has been employed a novel apparatus which, when implanted in a roadway over which a truck passes, registers with minute accuracy the impact of the truck, the apparatus being capable of such adjustment that the impact of a front wheel and of a rear wheel may be measured or recorded separately. Briefly, the apparatus may be described as consisting of a heavy steel cylinder in which is fitted a plunger, suggestive of the working of a hydraulic jack. A heavy steel plate tops the plunger and receives the impact of the motor truck inpart-

ing this to a copper cylinder which serves to register or chronicle permanently the force of the impact. The impact is measured by the shortening or compression of this copper cylinder and this is readily translated into equivalent static load. For each compression value of the copper there has been determined the static load that would produce the same compression and thus a perfect comparison of impact loads is possible. The approach to this impact apparatus is made of planking and the height of the planks above the road surface may be varied in order to represent the various heights of drop from which a truck, in normal service, would be likely to strike a road surface.

For all that the truths that have been disclosed by this apparatus with regard to the influence of tires, speeds, loads, spring characteristics, etc., will help materially in determining the destructive effect of truck loads on different types of roads it is likely, as has been said, that brick men will see an even more intimate connection between their industry and a second class of related tests that are but just now getting under full headway. These latter tests were planned for an earlier date, but scarcity of labor, etc., has interfered with the construction of the necessary trial roads or their equivalents.

TESTS BY A SPECIAL DESIGNED MACHINE

With the findings via the above described impact machine as a basis to work upon the experts are to now proceed to actually subject test sections of roads to corresponding impact effects. To accomplish this there has been invented, especially for this work, a machine that exerts upon road surface precisely the same kind of impact that is exerted by motor trucks. The machine embodies an unsprung weight together with a sprung weight just as in the case of a motor truck. The entire weight is raised by means of a cam and is allowed to drop a great number of times so that the impact will be exerted on the same spot. Continued impact action will be kept up until noticeable failure occurs and the experts promise that as the outcome of their observations they will be able to deduce accurately just how many vehicles per day any designated type of road will withstand when laid on a known kind of subgrade.

The program of brick road tests is intended to cover comprehensively 3 and 4-inch brick pavements of various types such as monolithic, semi-monolithic and sand-cushion construction, using repressed, wire-cut lug and vertical fiber brick with bituminous as well as cement grout filler. For purposes of comparison the "exhibits" afforded by the brick road sections will be set side by side with the outcome of duplicate tests applied to concrete road sections of different thicknesses and proportions, both plain and reinforced, and to sections of bituminous concrete and other types with and without concrete base. The pavement sections arranged for test are of two standard sizes, namely 7 feet and 14 feet square, respectively. The brick tests projected for the immediate future involve the use, for the most part of 4-inch or 6-inch concrete bases or a 6-inch or 12-inch macadam foundation. Sand cushions and sand-cement cushions are to be thoroly tried out. Indeed, the beauty about these tests, from a trade or technical standpoint, is that brick as a medium of highway construction will be tested in combination with the constituents with which it is normally associated instead of separately as has been the case in so many of the tests made in laboratories.

ESTABLISHING MEDIUM OF LICENSE FEES

While the tests designed to make each familiar type of motor truck write its autograph as a wearer-down of brick pavement, will, naturally, receive the most attention in this Governmental program, these by no means comprise the whole story. Other classes of vehicular traffic will likewise

be brought under the federal microscope. To that end, a wear testing machine has been designed to approximate the wear produced by heavily laden steel-tired vehicles. It is planned to introduce in this same connection a mechanical device to imitate the impact produced by horses' hoofs on the various types of pavement. All told, Uncle Sam proposes to not only expose just what classes of traffic are injurious and what are not seriously injurious to road surface but also to reveal what would be the proper and equitable basis on which the different classes of vehicles should contribute to road upkeep thru the medium of license fees.

* * *

Paving Brick Interests Consider Trade Acceptances

Possibility of applying trade acceptances to the transaction of paving brick business is a near future development in connection with activities of the National Paving Brick Manufacturers' Association, following the meeting of the Board of Governors of that organization at Cincinnati. At this meeting a committee to study the suitability of trade acceptances in the industry was created. This committee included Eben Rogers, Alton (Ill.) Brick Co.; John Kline, John Kline Brick Co., Wickliffe, Ohio; R. I. Williams, Poston Paving Brick Co., Crawfordsville, Ind.

A committee to act as trustees of trade markets also was appointed at this meeting. This committee will include C. C. Blair, Metropolitan Paving Brick Co., Canton, Ohio; O. F. G. Matteson; Purington Paving Brick Co., Galesburg, Ill.; Spencer M. Duty, Medal Paving Brick Co., Cleveland, Ohio; G. M. Thurston, Western Paving Brick Manufacturers' Association, Kansas City, Mo.; Maurice B. Greenough, National Paving Brick Manufacturers' Association, Cleveland, Ohio. A series of committee meetings will be held in Chicago, at which representatives of advertising, trade markets and traffic divisions will be represented.

* * *

Record Made in Brick Paving in Ohio

Monument to the paving brick industry of the Middle West, in the opinion of paving brick interests of Ohio, has just been completed in a 12-mile strip between Cleveland and the eastern boundary of the state. The road, of monolithic brick construction, is between Ashtabula and Conneaut. Besides being probably the highest class of brick road construction in this section of the country, the road was built in 92 working days, believed to be the fastest time for this quantity of work. This road is the last link in a completely paved road from Cleveland to Erie, with the exception of a small section in Willoughby, which improvement is held up awaiting the completion of a bridge which will eliminate a bad grade. The Ashtabula-Conneaut road was built by T. P. Fitzgerald, of Ashtabula.

* * *

Directory of Brands of Refractories

The second edition of a pamphlet compiled by the Refractories Manufacturers' Association containing the names of brands of fire brick and other refractories has just been distributed.

The directory contains the names of various brands of fire brick in alphabetical order, the name of the manufacturer accompanying it. The second section of the book contains a list of manufacturers together with location of their plants and the names of the brands of refractories they make.

PRESSURE *of* DEMAND NEARLY BREAKING BALANCE SCALES *of* BUILDING SUPPLIES *in* EAST

BUILDING MATERIAL ORDERS placed in this market and vicinity within the last few days forecast an early settlement of the differences existing in certain of the building trades of New York, reports the Dow Service, under date of September 29.

Whispering in building investment circles current earlier in the month to the effect that the day when a stabilization of wages and material prices would soon dawn developed into actual orders for building commodities. This movement has been greatly accelerated within the last week. It cannot at present be truly said that a return to complete confidence in the building outlook has been achieved. The situation, however, is unmistakably more hopeful and there is far more foundation for expectation of greatly improved conditions as far as stability of the labor and material markets are concerned, than conditions have warranted in a long time.

Portland cement interests appeared to be early advised of the change to take place, because the first fifteen days of September showed a gain in shipments from mills in Zones 1 and 2 running considerably over 50 per cent. of the shipments made in the same districts during the first fifteen days of August. The lumber yards in the outlying sections of the city report one of the heaviest Septembers in recent years as far as orders for building material are concerned. The movement as analyzed in the street department took on the aspects of a stampede for supplies over present needs, but this sort of buying was generally restricted and quotations were made accordingly. Most of the distributors are taking care of the present needs of their customers with an attitude indicating that the building industry need not worry from now on about being able to get necessary supplies on specification, but not on speculation. While it was not directly stated, the implication in the steel trade was that the situation was in strong hands, both at the mills and at the distributing points.

STRONG CALL FOR COMMONS—PRICE ADVANCES

Common brick, however, felt the heaviest weight of the change in the building situation. Dealers who have been backward buyers were more aggressively in the market, even tho the quotations advanced a dollar at the wholesale docks, making the present price \$16 instead of \$15, with the usual addition charge for handling and carting. Incidentally, the boats are now bringing into this market the last of the common brick held over in stock from the production of the years prior to 1919. The brick manufactured under this year's cost are not represented entirely by the new quotation. It is, in fact, a price held down to meet the general efforts of the strongest factors in the general building material market to keep the building material market stable as to price for the present at least and at the same time to meet the increasingly insistent demands of the manufacturers for an adequate return upon the investment they have been compelled to make this year. Their plea is that they cannot withstand the pressure much longer, with the financial help they have been accustomed to receive in other years, almost universally denied them.

It is significant that while almost every building material plant thruout the country is straining every endeavor to produce as near to capacity as the labor supply will

permit it to, hardly any of them in any line is able to lay up any reserve supply. The demand, tho trivial compared with what the potential building program of the country in general, and this city in particular already is prepared to call for, is aggravated by the effects of under-production of each man-power unit. The only ultimate out-come of this condition is higher building costs, resulting in higher rents to the wage-earning householder or board to the boarders. So far this demand has nowhere reached the stampede stage, except in the case of spruce lath. Just as soon as the demand for building materials becomes acute and the mills are unable to meet the market's requirements, the prices to the consumer, whether it is the home building householder or the speculating contractor, will advance even beyond levels we have recently known.

Shrewd financial interests realize this fact and it reflects almost completely the behavior of the building material market here in the last two weeks. The manufacturer has been importuned to sell his factory or mill output in some instances, common brick, for example, but he has not been inclined to sell under present market price. His price is fixed upon the quotations ruling at time of delivery. In the slate market there went out this letter under the date of September 15:

"To keep you as well informed as possible on the current prices of our slate, we hand you a temporary list of prices. Quarry conditions may make it necessary to further increase the price at any time in the near future without notice, but in the meantime we will be pleased to accept your orders for such sizes as are available. * * * There are few unfading green and mottled green and purple being produced, but nearly all sizes are booked ahead, altho the production is not equal to its demand.

* * *If you can carry a stock of slate we think it advisable for you to do so."

NO CHANCES FOR PRICES TO DROP

There are many business men with a similar vision of what the future has in store for them in the shape of demand and under-supply, who are sending out to their trade similar letters. Disturbances dealing with restricted hours of labor and "snowballing" of wages are thus shown to be sowing seeds for higher living costs in direct opposition to the efforts of the highest minds of the country to bring about conditions that will lower the cost of necessities of life. Under-production so far this year has increased the cost of living, by forcing up building material prices at least five per cent. The building material producing season for 1919 is now almost over and by the time the 1920 season gets under way, rents for newly built dwellings and apartments, reflecting higher realty assessments and higher cost for building materials and equipments, will have passed to even higher levels.

There is no chance for building material prices to drop. Consumers are fortunate if they stand reasonably still for the remainder of the year, because the pressure of demand upon meagre supply is already near the breaking point.

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In Los Angeles, there was a decided increase in the amount of building permits for August. Over \$2,400,000 was spent as against \$1,887,659 in July.

INDUSTRIAL DEMOCRACY PLEASES MEN

*This Unique Plan Pleases Workers, Improves Their
Efficiency and Ingenuity and Increases Production*

By B. C. Forbes

Editor Forbes' Magazine

Author's Note:—In the fourth article of this series the experience of another plant which has been running under Industrial Democracy for six years will be described. Some of the incidents illustrative of the solicitude of the workers for the welfare of the concern almost pass the comprehension of those who have never known anything better than the capital-versus-labor tug-of-war common to most corporations.

INDUSTRIAL DEMOCRACY is based on our national form of government. There is set up in each large organization a President, a Cabinet, a Senate and a House of Representatives. The representatives consist wholly of the workers themselves and are elected, by secret ballot, by their co-workers. Before any action relating to hours, wages, piece-work rates, health, production, or, in short, anything whatsoever affecting the workers, can be adopted, it must first come before the workers and receive their approval.

As told in previous issues in no single instance has the president of any corporation or firm operating under the Industrial Democracy plan been obliged to exercise his power of veto once a measure has been approved by the legislative bodies—a remarkable testimony of the sobering broadening, enlightening effect the granting of power has upon employes.

President Wilson, in his cabled message to Congress, pleads for "a genuine cooperation and partnership in control." He says further: "The new spirit and method of organization which must be effected are not to be brought about by legislation so much as by the common council and voluntary cooperation of capitalist, manager and worker." The President likewise pleads for the "genuine democratization of industry." His exhortation is for the application of the tenets of Industrial Democracy to business. The Leitch system, under years of practical test, under good times and bad, under the stress of war and prosperity of peace, in plants employing men and in plants employing women, in plants employing high-priced labor and in plants employing low-priced labor, has successfully met every condition, solved every management problem, satisfied the workers and increased the profits.

Brick and Clay Record gave in its issue of September 9, a long article by President Leopold Demuth, of William Demuth & Co., the largest tobacco pipe makers in the world, in which he recounted his experiences with the Leitch plan during the last two years and answered the questions most

commonly asked by other employers seeking a way out of their labor troubles.

Here is a little statement made, not by an employer, but by one of the ordinary workers in the Demuth plant, Harry Liebold, the representative of the amber mounting department:

"I have seen Industrial Democracy in operation at this factory for the past two years and the main reason I am for it heart and soul is because I know that thru it I can always get a square deal.

"When a man in my department has a grievance, he comes to me and tells me about it, and he knows that I will take the question up at the next meeting of the house of representatives, and consequently the foremen in the senate and the 'bosses' in the cabinet will hear about it. They will act on it one way or another, and my experience has been that every question has been settled fairly. Before we had Industrial Democracy, a man with any cause for dissatisfaction would most likely keep it to himself or tell the other workers about it. Perhaps the manager would be too busy to listen to him, so he would nurse his grievance and very likely he would quit. Industrial Democracy prevents just such little troubles before they get big.

"Nowadays at the plant you never hear a foreman urging the men to get on the job. There is no need for it. We all know that by doing our best all the time we are increasing our own dividend. Now whenever a man 'knocks off' early, comes in late or takes a holiday, it is not the boss that wants to know the reason why, but the other men and women workers whose dividends he is lowering.

"Before Industrial Democracy was put into effect it was every man for himself; now it is all for one and one for all.

"I have been in this shop for twenty years and I have never seen the desire to cooperate with the other departments and help the other fellow out so strong as it is now.

"Years ago if a worker had a grudge against the foreman he would probably lay down on the job whenever he thought he wasn't being watched; but that is a thing of the past, for whatever complaints a man has are now always quickly settled in a way satisfactory to everybody.

"Another thing: Industrial Democracy has proven that some of our men had stored up in their minds ideas for new machinery and other labor-saving devices; but they kept these plans to themselves. They were not sure of their reception by the management. Now a man with a good idea knows that not only will his suggestion be welcomed, but

that, if practical, it will be rewarded. In our plant today labor and time-saving machinery invented by the men is lowering the costs, increasing production and thus earning dividends.

PRACTICAL MATTERS DISCUSSED

"Industrial Democracy has given us our voice in the management of the shop; it has given us a lunch room where we can get good meals for twenty cents; it has made this shop a better place to work in; it is teaching English to our foreigners and helping them to become Americans; it has taught us that the firm has troubles and worries just the same as we have, and that by working and cooperating together we all benefit.

"That is what I think of Industrial Democracy as I see it at the Demuth plant, and I think all of the nine hundred workers here agree with me."

I attended a recent meeting of the senate and also the house of representatives of the Demuth plant. The senators, consisting of under-executives, superintendents, foremen and others under chief executive grade and above the rank and file, occupied themselves chiefly in discussing problems incidental to obtaining, promptly, adequate supplies of certain materials. This meeting was not very much different from the typical conference of men entrusted with the handling of workers and concerned with production.

The proceedings in the house, however, were unique. Promptly on the hour of meeting, some thirty workers, including quite a number of women, trooped into a large meeting place—a newly-opened lunch hall. It was discovered that several representatives were absent. The sergeant-at-arms (I think that was his title) obtained a list of the absentees and immediately went off to round them up. Excuses that they were "terribly busy" on this, that or the other piece of work were not accepted.

The speaker of the house was an intelligent-looking, thick-set young man, a fine specimen of the Italian worker. He called the house to order in a thoroly business-like way. At the table by his side was a girl secretary, who, having made a record of the roll call, proceeded to read a summary of the proceedings at the previous meeting, a week earlier.

The session was then open for the bringing up and the discussion of any question or any other matter of any kind which any representative wished to receive consideration.

One girl complained that when any of the men working on the floor directly above the girls in her department dropped any heavy article on the floor dust fell on their heads and shoulders. The girls naturally wanted to have it stopped. After several suggestions as to what remedy should be applied, a committee was elected, of which the girl introducing the subject was made a member, to investigate, find a solution, and report. (I learned subsequently that the insertion of weather-stripping along the seams effectively stopped the falling of the dust.)

Another girl Representative said that one of the dressing rooms was too small, and this created much confusion and delay at closing time. She submitted measurements which she had taken of the room, told the number of girls using it and the House voted that the matter should receive instant attention.

Most of the subjects were technical ones, concerning departmental matters. There was a most lively discussion between Representatives of different departments as to whether the failure to obtain uniform excellence in a certain wood or to the workmanship on the pipe before or after it left the polishing department. The spokesman of the polishing department insisted that the sandpaper used was the very finest grade made and claimed that if the finished product

was not up to standard, the fault would have to be sought elsewhere. So earnest did the men become in their endeavors to locate the fault that several times the Speaker had to rap his gavel and insist upon only one Representative trying to speak at once.

PROFIT SHARING PLAN REACHES ALL

Another subject discussed was whether it would expedite the movement of pipes-in-the-making in their progress thru the factory if a great many more trays were furnished. Some Representatives contended that the greater the number of trays, the greater tendency to let the pipes accumulate. Every angle of the question was discussed, and I could not help but remark how valuable such practical discussions must prove for the executives—a full record of the proceedings is kept and made available to all.

A complaint was made that it had not always been possible to obtain small lots of samples promptly. The Representative of one department got up and said that, as he knew that the whole organization depended upon the selling of the product, he always gave samples the right of way. The talk developed that a certain department was evidently a chronic laggard in this matter. The Representative from it was asked to give an explanation. He confessed that the dislocating of the regular schedule of operations in order to put thru a picayune lot of pipes had been regarded in his department as something of a nuisance, and that it was true that on occasion sample lots had been sidetracked for a while. The importance of the prompt turning out of samples having been thus brought home to them, however, they would mend their ways in the future.

And so it went, from one practical matter-of-fact subject to another. All these questions and problems and complaints, be it noted, were tackled by the men themselves and settled by the men. Most of the work was delegated to small committees, which make all necessary investigations, and then come back with a solution or recommendation. In the plant run in the ordinary way these thousand and one matters, little and big, would devolve upon the management, and inevitably some of the decisions rendered from above would be more or less unsatisfactory to the workers. Here, however, the workers were completely satisfied since the decisions were made by themselves.

This is one outstanding advantage of Industrial Democracy over profit-sharing or any other methods which have been tried. It gives the workers a manly share in the responsibilities of management, thus increasing their self-respect, their industry and their loyalty, and makes them feel that life is a fuller and more worthwhile thing than before. Incidentally, the fifty-fifty sharing of increased profits under the Leitch plan has not the fault of reaching merely the higher-ups and the skilled workers, but goes right down to the youngest boy or girl in the shop and is recognized by all as absolutely fair, since the amount of the fortnightly distribution is regulated by the efforts put forth by the workers themselves.

Recently I paid a visit in company with John Leitch to one of the plants operating under Industrial Democracy. Mr. Leitch consented to show me thru the place, and I was impressed by the attitude manifested towards him by the workers. As a rule, the moment they saw him enter the door of their department they raised a vigorous cheer.

I questioned Mr. Leitch, and he told me that in that particular department, where the work was monotonous and trying, he had a little while before made a suggestion to the workers that on the stroke of ten every forenoon and again in the afternoon, they all "go on strike for five minutes," throw open all windows, and relax or amuse them-

selves in any way they wished. They were all piece-workers and had had some doubts as to whether their earnings would suffer from this loss of fifty-five minutes a week. But the experiment had proved entirely successful. Hence the exuberant reception accorded him.



Eastern New York Brick Manufacturers' Association Holds Profitable Meeting

The gathering of the members of the Eastern Brick Manufacturers' Association at Albany, N. Y., September 17, proved an interesting and profitable event. Representatives were present from all parts of the state, including Buffalo, Rochester, Haverstraw, New York, and other sections represented in the membership, as well as from different parts of Vermont and Connecticut. Two sessions were held, morning and afternoon, at the Hotel Ten Eyck, with intermission given over to a delightful and enjoyable luncheon at this hostelry.

The morning session was called to order by Mr. Cary of Albany, who operates several brick yards in neighboring localities, followed by an instructive and inspiring address by Mayor Wall of this city. Mr. Stillman was made permanent chairman of the organization, and C. B. Reinhardt, of the Queen City Brick Co., Buffalo, was elected permanent secretary.

A feature of the discussion among those present covered a consideration of the difficulties which are now constantly being presented to prevent the production of brick on a normal or near-normal plane. Among the facts brought out was the matter of current producing costs, showing that this is being maintained at the lowest possible point, considering labor and general conditions. It was set forth that the demand for brick in the eastern section for immediate consumption is practically up to the supply in point of volume, with indications of an increasing call as the days go by.

The consensus of expressions among those assembled showed that it is the firm intention and desire of the different brick producers to maintain the selling cost of brick as low as may be consistent with good business; in this connection it was brought out that the lowest selling price of brick of all districts in attendance was that of the Hudson River section, the source of supply for the Greater New York brick market.

Other matters discussed were the labor situation, the handicap that bricklayers in different parts of the country are causing thru strikes and trade controversies, and the lack of support from this and affiliated quarters in giving the proper promotion to brick as the basic fireproof building material.

Among those making addresses before the gathering were Ralph P. Stoddard, secretary and manager of the Common Brick Manufacturers Association of America, with headquarters at Chicago; E. Knickerbacker Boyd, architect of Philadelphia, and in close association with the common brick manufacturers' organization; and Allen E. Beals of New York, head of the Dow Service Bureau, and whose address was printed in full in the September 23 issue of *Brick and Clay Record*.

In an interesting talk, Mr. Stoddard set forth the numerous advantages attending a nation-wide organization of brick manufacturers, to the end that brick should be promoted in every possible channel as the finest and most desirable construction material, regardless of how large or how small the proposed building or structure. He advocated the use of publicity and advertising work in

every consistent way, and gave some interesting and illuminating information covering contemplated publicity plans of the brick manufacturers' organization.

A number of other pertinent addresses were made by well-known men in brick circles before the meeting adjourned. Among those present from New York was William K. Hammond, a prominent brick manufacturer of that city.



Changes Deficiency Appropriation Bill

The House of Representatives in committee of the whole, on September 19, eliminated from the Deficiency Appropriation Bill provisions prohibiting the Attorney General from prosecuting labor organizations and farm organizations under anti-trust laws.



Clay Imports, 1918

Recently compiled statistics show that the imports of clay to this country during 1918 decreased 72,701 tons, or 27 per cent. in quantity, and \$123,265, or approximately 9 per cent. in value, over the previous year. The only clay which was imported in any considerable amount was kaolin, aggregating 168,100 short tons, valued at \$1,153,240 at the port of shipment; this was a decrease of 72,929 tons, or 30 per cent. in quantity, and of \$162,529, or 12 per cent. in value, over 1917. The average price per ton increased \$1.40. The imports of other clays were comparatively small. In 1918, kaolin comprised 86 per cent. of the total quantity, and 87 per cent. of the value of clay imports.



U. S. Immune to Europe's Coal Shortage

The United States will be immune to the coal shortage now threatening Europe, according to a statement recently made by W. P. Helm, Jr., of the National Coal Association. The total world requirements of coal are estimated at 179,511,000 tons, of which the United States can export only 19,325,000 tons and other countries 97,723,000 tons.

If We All Quit

The farmer, the miner, the grocer, the druggist, the milkman, the manufacturer, banker—*everybody*.

What's fair for one is fair for all.

What happens? Nothing to eat, nothing to wear, nowhere to go, and no way of going.

"Strikes undertaken at this critical time," says President Wilson, "are certain to make matters worse, not better."

*We don't want to Russianize
America.*

WAR *and* POST-WAR PRICE CHANGES *in* CLAY INDUSTRY

Reprinted from a Recent Bulletin, Issued by the War Industries Board, Which Shows the General Movement of Clay Products Prices Away from the Prewar Level

THIS ARTICLE, which is reprinted from a bulletin dealing with the prices of clay products, is one of 50 similar studies of wartime prices in different industries made by the War Industries Board. The purpose of these studies is to provide a permanent record of the great revolution in prices during the world war and to collect the price quotations gathered by various Government agencies, so that they will be available to men concerned with problems of business readjustment.

To throw as much light as possible on the course of price

account of facts regarding production, imports, exports, stocks, Government purchases, and Government control, which exercised some influence upon the prices of clay products from 1913 to the end of 1918.

The price charts of clay products are drawn on the same uniform scale that is used in all the bulletins; consequently the price fluctuations of clay products can be compared with the price changes of every other commodity quoted in these bulletins.

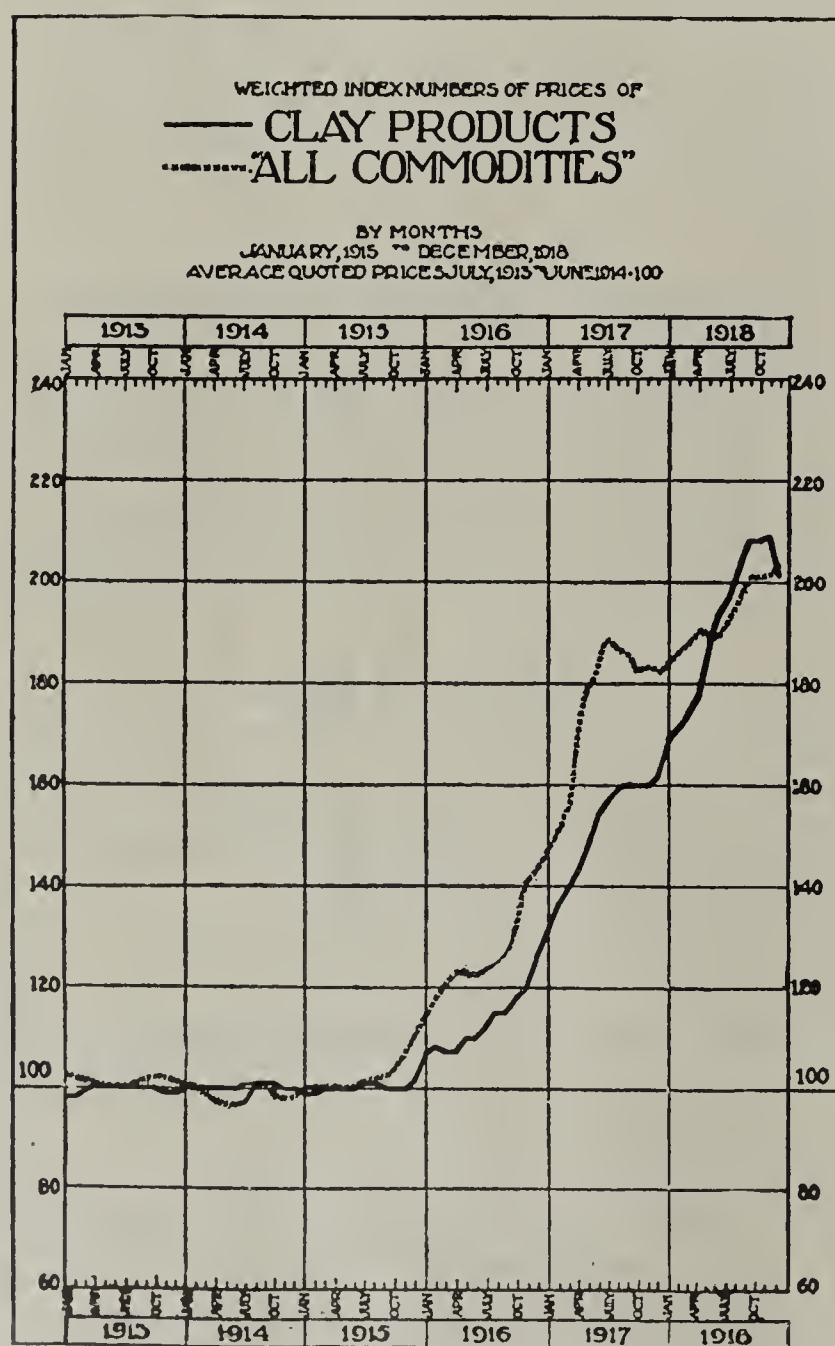
Since the inquiry is concerned with the effect of the war, the clay products charts, in common with all the other charts, are made to show the movement of prices away from the prewar level. This effect is produced by considering the average of the actual prices during the twelvemonth preceding the outbreak of the war (July 1, 1913, to June 30, 1914) as equal to 100 and reducing the actual prices for each month from January, 1913, to December, 1918, to the form of relative prices with the prewar average as base. For example, if the selling price of common brick averaged \$5 per thousand in the twelvemonth before the war, and if it fell to \$4.50 in October, 1914, the relative price in that month would be 90; if the price rose to \$15 a thousand in December, 1918, the relative price would be 300.

In order to show not only the fluctuations of specific commodities but also the general trend of prices in different industries, "index numbers" have been computed. The index number is made by multiplying the monthly prices of each commodity from 1913 to 1918 by the amount of the commodity produced in 1917 plus imports. The products of the different commodity prices times the 1917 production plus imports are added up separately for each month, and, finally, the monthly aggregates are turned into relatives on the prewar base; that is, the average aggregates from July, 1913, to June, 1914, were made equal to 100 and all the monthly aggregates were converted into relatives on that scale.

In addition to the 50 pamphlets devoted to separate industries, the series to which this bulletin belongs includes group studies of the prices of foods, clothing, building materials, and chemicals. There is also a set of international comparisons of price fluctuations, a special record of Government control over prices during the war, and, finally, a general summary of the whole inquiry in which the methods employed are set forth more fully and in which the leading results from all the bulletins are drawn together for comparison.

COMMON BUILDING BRICK

Common brick is normally the leading clay product both in quantity and value, the value of its annual output comprising from one-quarter to one-third of the total value of all clay products. During 1917 and 1918 the value of the output of common brick has been surpassed by that of

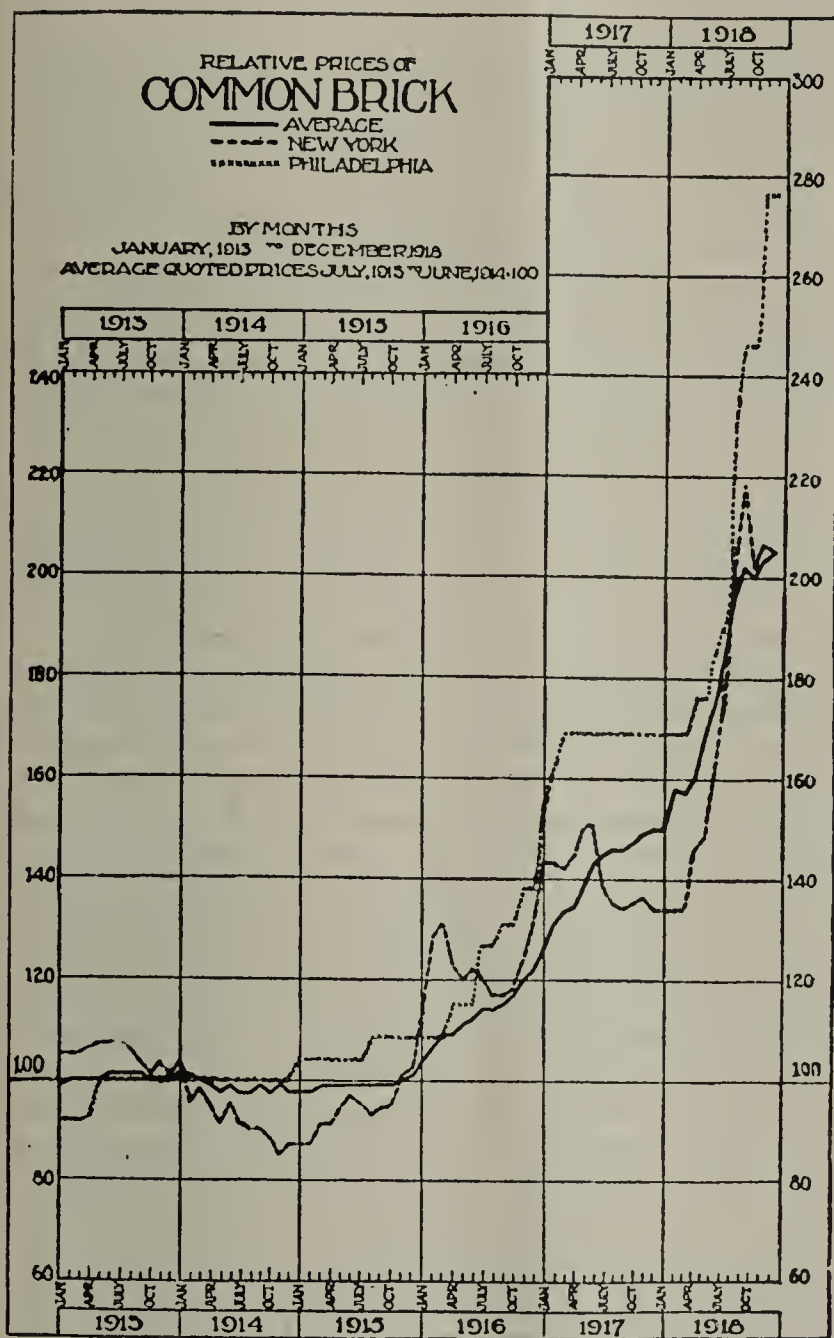


Weighted Index Numbers of Prices—Clay Products and "All Commodities"—By Months, January, 1913, to December, 1918. (Average Quoted Prices, July, 1913, to June, 1914 Equals 100.)

fluctuations, this article begins with a general survey of the clay products industries and is followed by a more detailed

the fire brick, used in furnace linings, but this was because of abnormal war conditions.

The manufacture of common brick is a local industry.

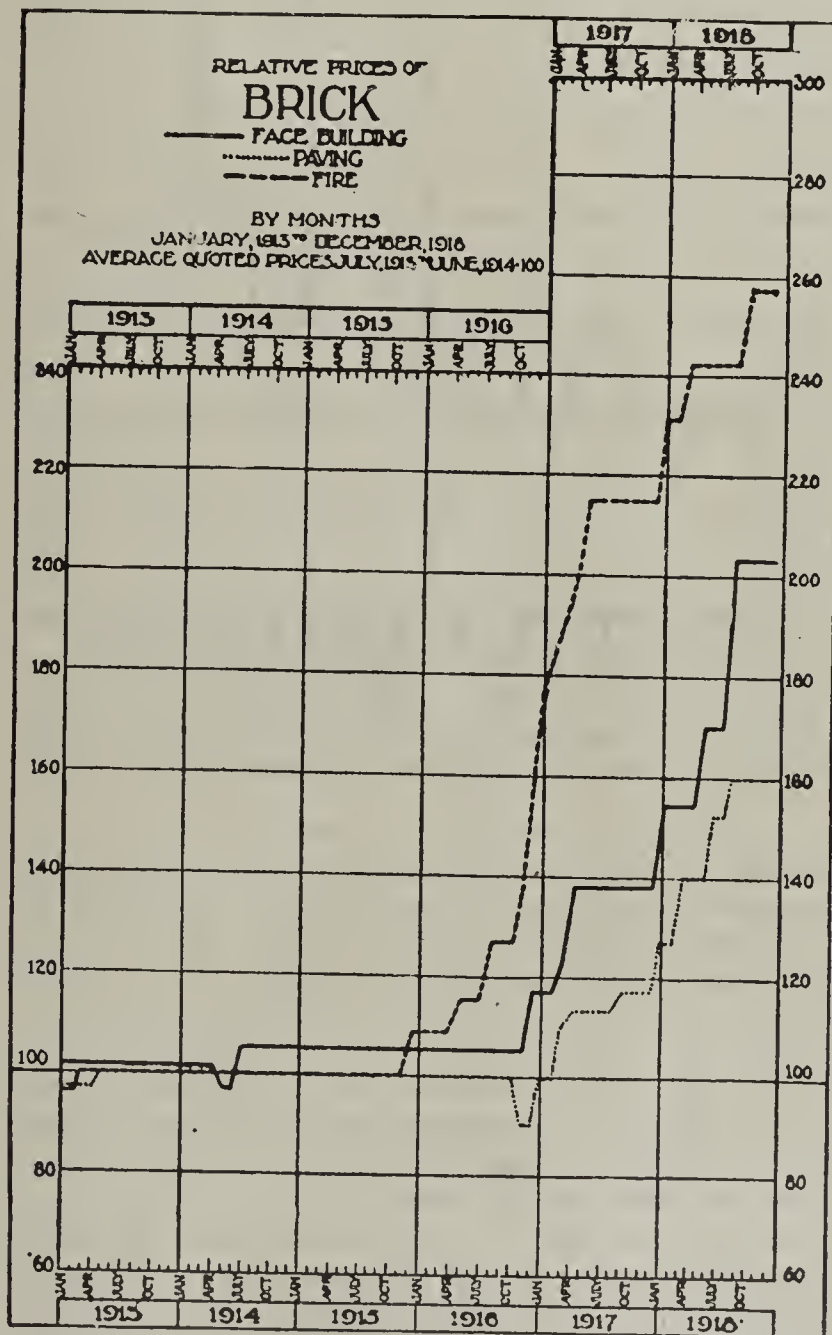


Relative Prices—Common Brick; Average, New York and Philadelphia—By Months, January, 1913, to December, 1918. (Average Quoted Prices, July, 1913, to June, 1914, Equals 100.)

The abundance and wide distribution of suitable clay enables each consuming center to secure its supply within its own vicinity, while the low value of common brick, normally only about \$2 a ton, prevents it from being shipped very far. While the size of a common brick market is sometimes limited to a radius of a few miles from the brick plant, its area can be extended by cheap water transportation or by low freight rates to a radius of several hundred miles. While local in its character, however, the common brick industry is by no means distributed uniformly thruout the country. The largest cities consume over one-half of the common brick manufactured in the United States; New York and Chicago alone took nearly one-quarter of the total before 1914. The per capita brick consumption in New York City in 1913 was 215, in Chicago it was 327 in 1916, in Detroit 377 in 1917, and in Los Angeles 400 in 1917; while 1913 the per capita consumption was only 25 in rural States like North Dakota and South Dakota, 40 in Texas, 47 in Idaho and Nevada, 36 in New Mexico, and 49 in Mississippi. The well settled Eastern States report a much higher per capita consumption than the States with a small urban population; thus the per capita consumption of New York State in 1913 was 140, of Connecticut and Rhode Island 130, of Pennsylvania and Ohio about 90, and

of Illinois 213. In practically every case the largest brick centers of a State are located near the largest cities.

Common-brick prices have conformed, on the whole, very closely to the cost of production and have lagged slightly behind the prices of other commodities. The declining demand and the competition between the common-brick manufacturers themselves, as well as the competition with other building materials, have had a depressing influence on the price. The demand for common brick is certainly on the wane; the per capita consumption has receded from the high point of 117 in 1905 and 1906 to 83 in 1913, 73 in 1916, and 57 in 1917. Since 1916 was a year of great building prosperity, this decline has not been due to the restriction of building. While the demand for common brick is declining on account of the increasing use of cement and hollow tile, competition between brick manufacturers themselves has been sharp. The small capital required to start a brick plant, the abundance of the raw material, and the simplicity of the industry have attracted several thousand firms into brickmaking. The fact that common brick is a standardized product that can be graded according to mechanical tests makes the competition between common-brick makers more severe, because the con-



Relative Prices—Brick: Face, Paving and Fire—By Months, January, 1913, to December, 1918. (Average Quoted Prices, July, 1913, to June, 1914, Equals 100.)

sumer can readily compare the prices of rival concerns and set off one against the other.

MARKET AND PRICE CONDITIONS IN COMMON BRICK

While common-brick prices have thus been forced to

hover near the cost of production, they have not been forced below that cost. Brickmakers will close their plants when the demand for brick is not sufficient to pay the direct labor and fuel charges. There is no pressure of heavy fixed investment to impel the brickyards to operate

manufacturers formed an association on July 26, 1918, which comprised manufacturers producing about a billion and a half brick annually, or about 20 per cent. of the normal production.

Since common brick is too cheap in proportion to its bulk to stand the cost of transportation to a distance, foreign trade in common brick is chiefly with Canada. The higher cost of fuel for producing common brick in sections of Canada near Niagara Falls gives brick manufacturers near Buffalo an advantage, and consequently a local export trade has started. This trade declined during the war.

While brick prices in all localities have responded to the generally increasing labor and fuel costs and displayed a similarity in their movement, there are some local price influences of sufficient importance to warrant a brief account of certain city markets during the war.

COMMON BRICK IN NEW YORK

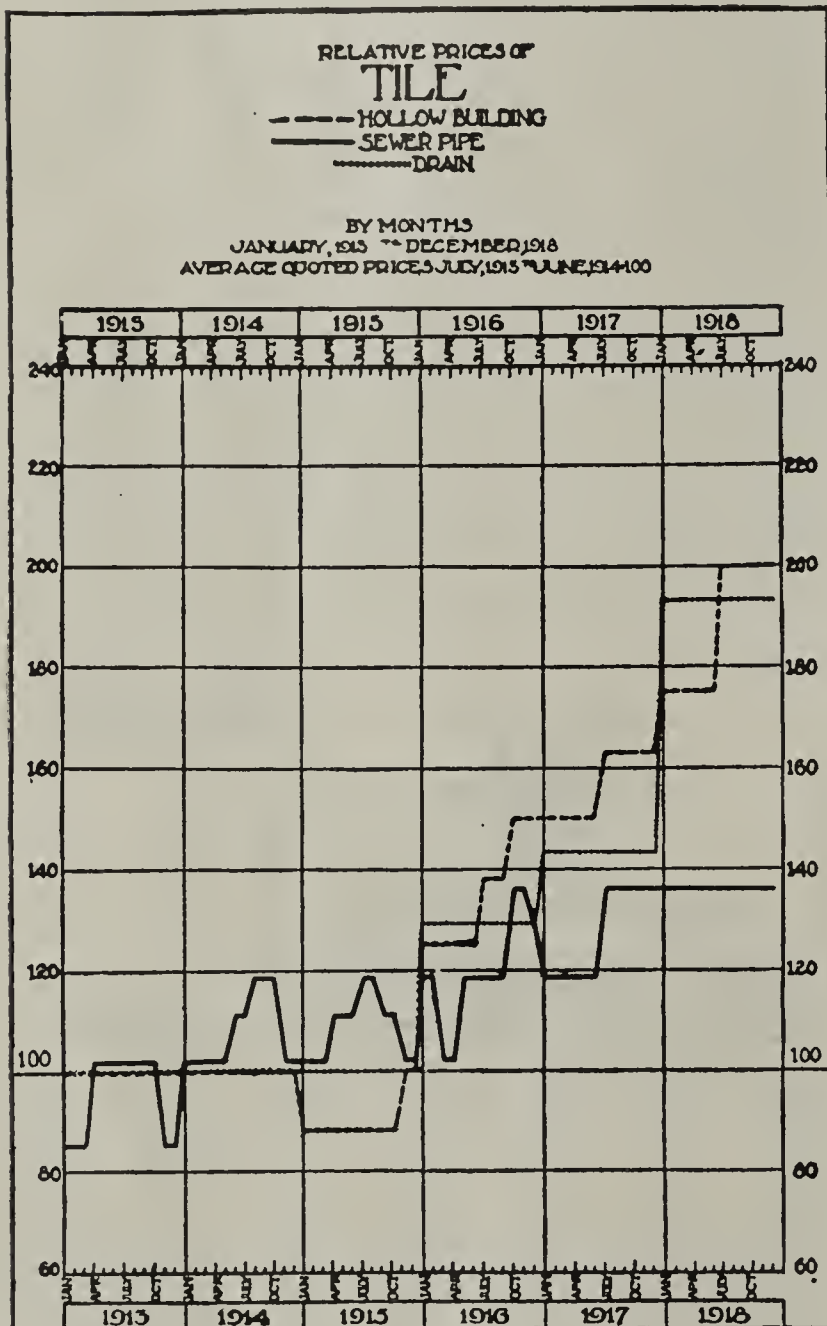
New York City was the largest common-brick center in the United States in 1913, consuming 1,000,000,000 brick, or 12½ per cent. of the total production. In 1916, however, Chicago gained the lead. The cost of producing brick for the New York market is low on account of the cheap water transportation from the Hudson River brick district and the large scale of operations, while the severe competition between the Hudson River brick producers and the New Jersey and Connecticut manufacturers has kept New York brick prices almost as low as the cost of production.

New York common-brick prices have exhibited a sensitiveness to the broad forces affecting the business cycle, from which brick prices in smaller cities have been immune. Thus, during the prosperous year of 1913 there was a record production of common brick in the New York district of 1,025,308 M brick; but with the slight business depression in 1914 and 1915 brick production declined and prices slumped. The output in 1914 was only 888,266 M. Brick prices began their rise in response to increased building activity in New York City in 1915, and production rose to 960,527 M brick in that year. A new peak of building activity in New York City, \$214,706,255, was reached in 1916, but the demand for common brick declined and the production was only 893,522 M brick. The restriction on building caused by the entry of this country into the war was especially noticeable in New York City, where the value of work under permits fell to \$99,310,018 in 1917 and \$54,318,524 in 1918. In the Borough of Manhattan, building operations in 1918 were only one-eighth of those in 1917. With this sudden drop in building, the production of common brick very naturally declined. In 1917 it was only 584,184 M brick, but even this production was greater than the market could absorb; for such stocks had accumulated by the end of 1917 that production in 1918 was only 90,000 M brick and only 48 of 550 brick machines were operated.

The fact that most of the New York brick consumed during the year 1918 was produced on the lower wage level of 1917 explains why New York common-brick prices advanced less during 1918 than brick prices in other cities, and it also explains why the price of New York brick for Government purchases was fixed at \$10.50 a thousand in contrast with a price of \$15.50 for the same brick in Philadelphia.

THE PHILADELPHIA MARKET AND OTHER CITIES

Philadelphia brick are normally somewhat higher in price than New York brick, because they are larger in size and of better quality. The distinguishing feature of Philadelphia brick prices is their sharp rise in 1918. A period of building activity in Philadelphia that not only rose to a high peak in 1916 but continued almost unabated down to 1918 had



Relative Prices—Tile: Hollow Building, Sewer Pipe and Drain
—By Months, December, 1913, to December 1918. (Average Quoted Prices July, 1913, to June, 1914 Equals 100.)

at a loss; and in fact they are accustomed to expand and contract the scale of operation to meet the seasonal changes in demand, working at 60 per cent. of capacity in the winter and at full capacity in the early spring. The price of common brick from 1913 to 1919 bears evidence of this fundamental tendency. While the demand for common brick declined rapidly after the entry of this country into the war, on account of the curtailment of civilian construction and the lack of Government demand for durable buildings, nevertheless common-brick prices rose in close conformity to wages and fuel cost.

The chief restrictions on the common-brick industry in 1917-18 were imposed by the exigencies of war—scarcity of labor, high wages, car shortages, high freight rates, etc. The order of the Fuel Administration on April 13, 1918, limiting the coal used by common-brick manufacturers to 50 per cent. of their normal supply, had only a theoretical application; for in most cases the demand for common brick was already less than 50 per cent. of normal. It was the lack of Government orders rather than the Government restrictions which caused the brick men to complain. In an effort to counteract the declining demand, the common-brick

maintained a strong demand for brick and exhausted the stocks, so that the demand in 1918 had to be supplied by the unusually high-priced labor of 1918, and common-brick prices in Philadelphia rose almost 75 per cent. in that year.

Common-brick prices in other cities responded to the general tendencies already indicated. In a great many smaller cities, however, common-brick prices maintained an unbroken level from 1913 to the beginning of 1916 and did not start their upward trend until pushed up by increased wages.

GOVERNMENT PRICE FIXING

The prices of common brick were fixed for Government purchases in 16 different districts, the maximum difference in price being \$6.50 a thousand brick. The chief effect of this price control was to reduce somewhat the prices paid by the Government in the congested building districts of New York and Philadelphia. Since only 108,000 thousand brick were allocated at these fixed prices, however, the general average of common brick prices was hardly affected by price fixing.

FACE BRICK AND PAVING BRICK

Front or face brick prices have maintained a higher level and have advanced slightly more rapidly than the prices of common brick. The competition between face-brick manufacturers has not been so severe as in the case of the common brick, because face brick are extremely diversified as to size and color, and each leading manufacturer makes a distinct product that appeals to individual tastes and is distributed thruout a national market. Moreover, the demand for face brick has not been cut down by the substitution of other materials to the extent that has occurred in the case of common brick. Face brick are used in conjunction with hollow tile, a competitor of common brick, as well as with common brick, lumber, and stone. As a result the demand for and production of face brick declined only in the depression of 1914 and advanced during 1915 and 1916.

The war caused a great reduction in the demand for face brick, as they are used chiefly in residences and office buildings of a permanent character. The Fuel Administration on April 13, 1918, limited the fuel supply of face-brick makers to 50 per cent. of normal, but the total output in 1918 was undoubtedly reduced more than the coal allotment. Face brick men even manufactured face brick for use as common brick and sold them at common-brick prices in order to maintain their organizations during the war.

Paving-brick, or vitrified-block, prices have been exceptionally depressed during the war, their prices advancing less than the prices of any other brick. Even before the war the demand for paving brick had been curtailed by the growing use of cement, so that the production of paving brick had failed to increase. The demand for paving brick was nevertheless fairly stable until the outbreak of the war.

During the war paving of alleys and streets that normally used paving brick was regarded as nonessential and was reduced to a negligible amount. The Government used very little paving brick in contonments. The paving-brick manufacturers made common brick to prevent the almost complete stopping of their business.

TILE AND SEWER PIPE

Hollow building-tile prices have advanced slightly more rapidly than those of other clay products used in building. Building tile were regarded as more essential for war construction than common brick, for the fuel supply was restricted only to 75 per cent. of normal at the time other clay building materials were restricted to 50 per cent. The Government used hollow building tile for many housing pro-

jects and in ammunition-plant construction. Nevertheless the production of hollow building tile declined from 2,590,028 tons in 1917 to an estimated 1,200,000 in 1918. The prices per ton fixed by the Government upon its purchases of hollow building tile are shown by the following table:

	July 1 to Dec. 31, 1918.	Prior to July 1, 1918.
Perth Amboy, N. J.....	\$ 9.75	\$ 9.00
St. Marys, Pa.....	7.95	7.20
Canton, Ohio.....	7.50	6.75
Terra Haute, Ind.	8.00	6.75
Louisville, Ky.	8.10	8.10
Birmingham, Ala.	8.55	8.55
Mason City, Iowa.....	7.20	7.20
Coffeyville, Kans.	7.20	7.20
Elmendorf, Tex.	11.00	11.00
Athens, Tex.	11.00	11.00
Salt Lake City, Utah.....	10.00	10.00
Los Angeles, Calif.	10.00	10.00
Lincoln, Calif.	10.00	10.00
Seattle, Wash.	10.00	10.00

Drain tile prices rose only to a moderate degree during the war. These tile are used to carry water from flat lands in the North Central States, and being bulky and fragile their production is limited to points near the consuming districts in Iowa, Illinois, Indiana, Ohio, and several other states. While drain tile were placed in Class IV by the War Industries Board, and thus had a preference over most commodities because of their use in agriculture, the draining of lands was discouraged by the War Industries Board as not being the quickest way to increase the food supply, and hence the demand for drain tile was somewhat curtailed. The Fuel Administration also limited the fuel consumption of drain tile manufacturers to 75 per cent. of normal on April 13, 1918.

Sewer-pipe prices advanced only moderately despite the great Government demand during the war. The prohibition of the use of iron pipe in order to save steel gave clay sewer pipe a monopoly not only for cantonments and Army projects but for ordinary uses as well. While the Fuel Administration restricted the amount of fuel consumed by sewer-pipe manufacturers to 75 per cent. of normal, these restrictions would have been lifted had essential demands required it.

FIRE BRICK

Fire brick used for lining furnaces alone among all brick products advanced rapidly both in quantity and value. The production increased from 816,784 M in 1914 to 1,636,316 M in 1917, while the value increased from \$16,427,547 to \$58,012,264.¹ This remarkable rise—a doubling of production and almost a quadrupling of value—is to be accounted for by the activity of furnaces engaged in war business. The total value of fire brick has risen from a point where it was not one-sixth that of common brick to a point where it now exceeds common brick in value and ranks above all other brick products.

The usual demand for fire brick caused the price to rise higher than that of other clay products. While wages in the industry and the prices of fire clay doubled, the price of fire brick increased even more rapidly. The concentration of the production of fire brick in Pennsylvania and other States located near large furnaces, the greater scarcity of fire clay as compared with common clay, and the greater expense involved in manufacture, enabled the fire-brick manufacturers to attain a degree of concentration not possible in the case of common brick.

The formation of an association has no doubt contributed to keep prices up. Exports of fire brick to Canada in-

¹The estimated production of fire brick in 1918 was 1,373,674 and the value was \$63,637,600, according to the U. S. Geological Survey.

creased rapidly during the war, undoubtedly because of demands from Canadian blast furnaces which had war orders to fill.

The importance of fire brick for the war program was recognized by the War Industries Board when it placed it in Class IV of its Preference List No. 2. The fire-brick manufacturers operated at full capacity during the year. In March, 1918, they had the capacity of their plants sold out from two to six months in advance, and the increased war orders from the United States stimulated the demand for their products still further.



Kansas Makes Good Record in Brick Roads

Under the heading of "Ohio Sets Record for Brick Roads," a short item was published in the September 9 issue of *Brick and Clay Record* calling attention to the large amount of contracts that had been awarded for brick highway construction in Ohio so far during 1919. According to latest figures, 800,000 square yards of pavement of this character have been contracted for, instead of 80,000 sq. yds., as previously reported.

Figures for Kansas show that that state is trying hard to catch up to Ohio. At the present time there has been awarded contracts upon which construction is now being carried on, covering 235,000 square yards of 18-foot brick road. Of this amount 115,000 square yards is in Reno County, Kansas, and 120,000 square yards in Sedgewick County, Kansas. This is all federal aid work and a large amount additional in each county is to be let this fall for construction during 1920.



Highways Transport Committee Discontinued

The Highways Transport Committee, which was established by the United States Council of National Defense as a necessary adjunct to its war-time activities, has been discontinued as of September 15, 1919, according to a statement recently issued by Grosvenor B. Clarkson, Director, United States Council of National Defense.

The Highways Transport Committee was continued thru the readjustment period up to September 15 in order that such of its work as was initiated under war-time conditions might be tapered down to a point where it could properly be closed.

The chief reasons for dissolving the committee were necessary curtailment of expenditures and the apparent fact that the war-time functions of the committee did not with sufficient explicitness fall within the peace-time activities of the Council, as laid down by the congressional act creating it.

Certain surveys, more recently initiated by the Committee, logically related to the permanent research work of the Council, are being continued.

The Council, by order of the President, recently took over the records and files of the War Industries Board, originally created by the Council, and of the Committee on Public Information. All of this material will be studied, and, where practicable, kept up-to-date in so far as it bears on the national defense.



One Way of Americanizing Employes

"Every foreign born workman speaking English and no man without his first papers by 1921." This is the aim of a certain large rubber manufacturing concern in its Americanization program. The company has long known and recognized that Americanization is one of the greatest

factors in preventing industrial unrest, Bolshevism, unemployment and misunderstandings between employer and employe.

This company is making great effort to educate its alien workmen to understand our language, customs and living conditions—to show them that just so long as they neglect to learn our language, live in clean surroundings and below the American standard of living, just so long will they fail to attain the respect of their American born fellow workmen.

The instrumentality which the company is offering to those alien workers to perfect themselves, is a factory school, which is more and more attaining the proportions of a university. An elaborate school program is being carried out in which aliens are taught to read, write and speak English.

These workmen are making an honest effort to learn the language of their adopted country and will become good citizens of the republic. Many who had formerly questioned the advantages of speaking our tongue have greatly advanced themselves in many ways.

At present 61 classes are receiving instruction each week. The entire course consists of 250 hours of class room work in three grades. The first grade teaches conversational English; the second, history and government; and third, the ideals of Americanization.

Advancement depends, of course, upon ability, for as soon as a man is sufficiently advanced he is transferred to the next higher class. But Americanization work is by no means limited to factory schools. It embraces a department where the employe may secure expert legal advice without cost.

A housing bureau provides for proper and suitable living conditions. A complaint department is available for ironing out misunderstandings. A suggestion committee provides rewards to workmen making valuable suggestions affecting policy and product.

Hospitals and free dispensaries with free attendance of doctors and nurses attend to physical ailments. A cafeteria furnishes meals at cost. A modern and thoroly equipped gymnasium and an athletic field furnishes ample opportunity for following all athletic inclinations.

If sick or injured he is taken care of by the relief association. If dissatisfied with his work remedial investigation is made into conditions giving cause for the dissatisfaction.

The company can refer with pride to the broad scope of its Americanization work. Its success is evidenced by that intangible yet binding comradeship which has played so large a part in the institution's growth.



Face Brick Dealers Establish Headquarters

National headquarters for the Face Brick Dealers' Association of America have now been established in Chicago. A very spacious and well furnished suite is now being occupied by Secretary Montgomery at 406 Tower Building. Not only are the headquarters extremely inviting to the visitor but the location of the building is ideal, being situated at Madison St. and Michigan Blvd. and overlooking the lake front.

Morris W. Montgomery has recently taken over the secretaryship of the Face Brick Dealers' Association and is now busily engaged getting onto the ropes of the work and planning the extensive publicity campaign which promises to be one of the most important moves ever undertaken by this organization.



It has recently been announced that the New York "Tribune" investigation reveals the fact that 34 per cent. of the strikes now going on are for shorter hours.

PHENOMENA *of* CLAY

PLASTICITY EXPLAINED

A Technical Description of the Causes for the Above as Well as Other Physical Characteristics of Clay Upon the Addition or Expulsion of Fluids

By R. F. MacMichael

Consolidated Kansas City Smelting & Refining Co., El Paso, Tex.

IN SEEKING THE CAUSE of plasticity in clay the first and most obvious step is to consult the existing literature on the subject, in order to learn what has been done in the past along similar lines. A search of such literature reveals the fact that while theories are not lacking as to the cause of plasticity, only a very moderate amount of work has been done in the collection of such data as is necessary to establish any given theory on a sound scientific basis.

The author has spent several years in devising methods and constructing instruments for the measurement of the various properties of clay. The primary object of this work was commercial, in order to obtain good technical control over the product of a plant producing glazed ware. The theoretical and scientific side of the question developed only during the latter stages of the investigation. The methods, apparatus and forms employed in testing are described in detail in Part 2, to be published in a subsequent issue.

As the result of this work several facts not heretofore generally recognized have been brought to light. Principal among these are the following:

1. The strength of clay, whether plastic, dry or burned, is due to the molecular cohesion of the clay particles themselves.

2. Water, when added to a mass of dry clay, produces a disruptive force within the mass, opposing cohesion and reducing the strength of the clay.

3. Plasticity results from a balancing of the forces of cohesion and disruption.

4. Fluids other than water may be used to produce plasticity in clay.

5. Organic matter, soluble salts and colloids, except as the latter are considered to be merely very fine, insoluble particles of the clay itself, are not essential to plasticity.

The general observations on which these statements are based are as follows:

MOLECULAR COHESION IS CAUSE OF STRENGTH

Molecular cohesion, or its equivalent, is held to be the immediate cause of strength in all materials. Thus, whether we are dealing with a bar of clay or a bar of iron, the attraction or cohesion between the molecules is considered as the cause of strength of the material.

It has been stated that this force acts only at almost infinitesimal distances. There seems to be no good reason for this assertion. The molecules of the earth certainly appear to attract the molecules of the "falling apple." Likewise the molecules of the sun appear to attract the molecules of the earth thru a distance of millions of miles.

Whether we consider that atomic attraction, molecular attraction, cohesion, adhesion, tensile strength, force of gravity, etc., are merely different manifestations of what is essentially the same force, or not, is immaterial for our present purposes. The essential fact is that these forces exist, and are capable of producing large effects at great distances.

The cohesion between solid bodies in contact may be readily shown by means of the Swedish gages used in machine shops, shown in the illustration, Fig. 1.

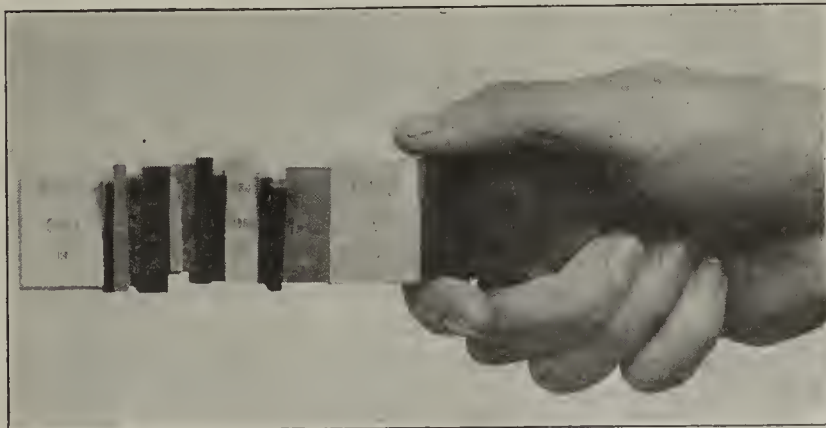
These gages are pieces of hardened steel of varying lengths, with a uniform cross section. The ends are highly polished and are accurate and true to dimension within one one-hundred thousandth part of an inch.

When the ends of two of these gages are carefully cleaned and slid together in such a manner as to exclude the air, they will be found to cohere with a very considerable force. Values as high as 35 pounds per square inch have been measured when tested in vacuum.

Like the particles in a mass of wet clay, under small lateral pressure the gages stick together and act as a rigid body. Under heavier lateral pressures they will slide freely over each other without breaking contact.

If the exposed surfaces are wetted with oil and the gages moved over each other, a film of oil is carried between the surfaces in contact and the gages fall apart. This disruptive force of oil between the gages is the equivalent of the disruptive force of water between clay grains.

In ordinary gravel, of say, one inch mesh, the points of



Illustrating the Cohesion of Solid Particles in Contact With Each Other by Smooth Metal Pieces Being Slid Together So As to Exclude the Air.

contact are relatively few and far between, so that cohesion is entirely imperceptible.

With fine sand a simple calculation will show that the

number of points in contact may be a million times more numerous than in gravel, so that when closely packed a very distinct cohesion is apparent. Thus small masses may readily be picked up and handled without crumbling.

STRENGTH DEVELOPED BY CLAY IN DRYING

With clay, the ratio as compared with gravel may be as much as ten billion to one. In this case, when the particles are floated into place and closely packed by means of water, with subsequent drying, the cohesion or strength developed may reach hundreds of pounds per square inch.

When this clay is burned in the kiln and thoroly vitrified, the number of points of contact becomes practically infinite; that is, the mass is substantially continuous within the limit of molecular dimensions. In this case the cohesion or strength frequently reaches thousands of pounds per square inch.

It is apparent from the above that in any investigation concerning the properties of clay, molecular cohesion plays a part of the very first importance.

ACTION OF WATER ON CLAY MASS

When water is added to a mass of dry clay, a disruptive force is developed within the mass, opposing cohesion and reducing the strength of clay. This disruptive force is due to the molecular attraction between the water molecule and the clay grain, which enables the water to wet the surface of the grain. This interposed film of water tends to reduce the cohesion of the clay grains to that of the water, which is very slight. Obviously the more water included in the mass, the greater will be the reduction in strength, till finally a very thin slip is obtained.

A typical example of this is shown in the table, with its accompanying curve shown in Figure 2. For convenience in manipulation in the laboratory, the process is here reversed, and bars of wet clay are dried slowly. The loss in weight and the gain in strength are noted from time to time and the curve plotted:

DRYING TEST ON ONE-HALF INCH BARS			
Plasticity—1.6	Dry Length—94 Per cent.		
Water in terms of Dry Clay	Strength Lbs. Per Sq. Inch	Remarks.	
45%	.....	Thick slip	
30	.....	Very soft mud.	
23	1	Soft mud.	
21	15	Flows easily under pressure.	
20	30	Rather stiff. Hardly flows.	
18	50	Slightly brittle.	
16	100	Leather hard.	
14	140	Sharp break. Shrinkage all out.	
12	170	Turning gray. Past leather hard.	
8	250	Looks dry, feels cold.	
7	300	Feels dry.	
4.7	370	Air dried at 65° F.	
0	490	Dried at 212° F.	

It is thus evident that the disruptive force of water also plays a role of prime importance as a cause of plasticity in clay.

Thus we have molecular cohesion which makes clay strong, and the disruptive force of water which makes it weak. To make clay plastic we add sufficient water to reduce the strength to a point where we can readily overcome it by the pressure of the hands. In actual practice the wet strength usually amounts to from one to three pounds per square inch.

It is difficult to add water successfully to large masses of clay. It is customary, therefore, to grind the clay to a

moderately fine mesh and then add water. This, of course, does not alter the fact that essentially we are adding water to small pieces of dry clay to reduce their strength to the desired point. The subsequent pugging welds the separate pieces into a solid, homogeneous mass.

The balancing of the forces, as noted above, produces a peculiar combination of fluidity and rigidity in the mass of wet clay. Under light pressure it acts as a rigid body. Under heavier pressures it acts as an imperfect fluid.

The slight rigidity of a mass of wet clay is due to friction between the clay grains. Work is required to overcome this friction, so that a mass of clay retains its form, until acted on by a force sufficient to produce distortion. The fluidity of the wet clay is due to the freedom of the individual particles to move over each other, after cohesion has been partially neutralized by the addition of water.

SHRINKAGE A REARRANGEMENT OF CLAY GRAINS

Actual contact between the clay grains, producing internal friction, is not incompatible with shrinkage. The latter implies only a re-arrangement of the clay grains in more compact form, in spaces previously occupied by water. In the same manner, three spheres may be so arranged that the over-all length can expand or contract without breaking contact.

As clay dries, the mass contracts under the force of molecular attraction, increasing in strength and rigidity and decreasing in volume. At the point where internal friction prevents further re-arrangement of the grains, the shrinkage ceases. The increase in strength of clay in drying is due to the decreasing amount of water present and consequent lessening of the disruptive force, and to the smaller average distance separating the clay grains, thereby increasing cohesion, as shown in the curve.

Clay being a hydrated material has a compound molecule, containing in addition to the mineral matter present, one or more molecules of water. As the temperature is raised in burning, a point is reached where the attraction between the mineral components and the water molecule is no longer sufficient to hold the latter against the constantly increasing force of heat vibration, and the water molecule is thrown off in the form of steam. This is called dehydration. Tho the vibration of the water molecule is sufficient to cause dissociation from the general mass, and dispersion in gaseous form, the vibration in the remaining mass is, as yet, so comparatively moderate that it still retains its solid form.

At this point, the cohesion of the clay when cooled is greater than the disruptive force of water. The mass does not disintegrate, and plasticity is destroyed. The organic matter of clay is also burned out at about this point.

With a further rise in temperature a new disruptive force appears within the mass. This is due to the heat vibrations within the clay grain itself. It is similar to, but entirely separate and distinct from, the disruptive force of water. This new disruptive force eventually overcomes the cohesion of the molecules of the dehydrated clay, causing the mass to soften.

If substances are present which develop excessive vibratory action at comparatively low temperatures, or which form compounds having this action, the cohesion of the mass is reduced and softening will take place earlier than would otherwise be the case. Such substances are known as fluxes.

HIGH TEMPERATURE INCREASES VIBRATORY ACTION

The intense vibratory action at high temperature permits the rearrangement of the constituents of the clay with the formation of new chemical compounds, and results in a great increase in the density and strength of the mass when

cooled. This is known as vitrification. This closer contact also results in a diminution in volume, known as burning shrinkage. These changes are analogous to those observed in the drying of clay, and are produced by the same cause, i. e., atomic and molecular attraction.

If the above process is carried far enough, the clay will melt down to a thin liquid, permitting further re-arrangements of the atoms and molecules to take place, with the formation of glass or glass-like products. In general, such compounds when cooled show very great strength and stability, with great resistance to disintegration from any cause.

In a clay slip, under ordinary conditions, the grains settle slowly to the bottom. This period of settling may range from a few minutes for coarse clay and sand, to several days or even weeks for very fine particles.

When an electrolyte, such as sodium carbonate or ammonia is added to the slip, the attraction between the fine particles is increased, causing them to group together into more compact masses. This is known as flocculation and decreases viscosity.

This is equivalent in effect to removing a quantity of very fine clay particles and replacing them with an equal quantity of coarse particles, which obviously produces a thinner slip.

When other electrolytes, such as hydrochloric or nitric acid are added, the process is reversed. The fine clay particles are separated and viscosity is increased. This is known as deflocculation. This is equivalent to removing a quantity of coarse particles and replacing them with an equal quantity of fine particles.

These processes are believed to be due to ionization of the particles, and are observed in a large number of substances when suspended in a finely divided state in water. These effects are well shown by the use of a suitable form of viscosimeter and squared paper.

These forces, while producing large and striking effects in thin slips, are in reality quite small as compared with the forces acting in dry or burned clay.

PLASTICITY NOT IMPAIRED BY REPEATED CHANGES

It should be noted that flocculation and deflocculation may be repeated indefinitely in clay without impairing its plasticity. This is not usually the case with true mineral colloids, which in general take an irreversible set and do not return to the colloidal condition.

The thickness, or viscosity of a clay slip when in a state of maximum deflocculation is an indication of the plasticity of the clay, as described in Part 2.

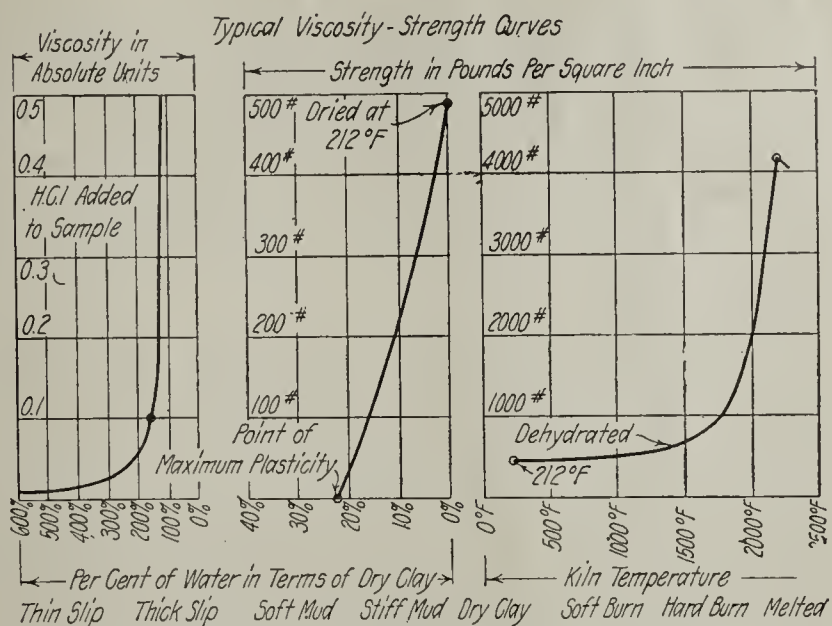
The individual clay grain is not softened upon the addition of water. Repeated wetting and pugging does not materially alter the size of the grains or change their general outline or appearance. This would not be the case were the clay softened and reduced to a homogeneous mass upon wetting, and subsequently broken up with the formation of new grains when dried and ground. Whether wet or dry, under the microscope, the grain retains its appearance of a hard, sharply outlined body.

In the formation of clay from rock, disintegration, hydration, and leaching of soluble salts occur. These processes are both physical and chemical in their nature, and result in the formation of a very large number of exceedingly small particles, the smallest of which presumably approach the dimensions of single molecules. Such particles are very much finer than would ordinarily be produced by any strictly mechanical process alone.

The properties of such particles would approximate the properties of the molecules composing them, and would show, to some extent at least, such phenomena as molecular attraction and cohesion as indicated above. These proper-

ties would be transmitted in part to the entire mass of clay, as it is obviously not necessary for every particle to be of the smallest size, provided they are graduated from the largest to the smallest, and the voids kept low.

Those clays containing the greatest number of fine particles would show the above properties to the greatest ex-



Viscosity—Strength Curves Which Show the Reduction in Strength and Plasticity Accompanying the Addition of More Water.

tent, which corresponds with ordinary observation, that fine grained clays are the most plastic.

HOW TO DEVELOP PLASTICITY

Plasticity, to a certain extent, may be developed in non-plastic materials by the following method:—Pieces of the substance to be treated are thoroly pulverized in a hard steel mortar, passed thru a very fine sieve, and ground with water in an open mortar. The resulting mass is plastic to a greater or less degree. To get good results considerable care must be employed to obtain the maximum amount of very fine material.

Plastic material, or artificial clay, has thus been formed from slate, plaster molds, iron ore, ashes, lava, limestone, sandstone, burned brick, feldspar, quartz and glass.

The softer materials become exceedingly smooth and plastic. The harder materials yield less readily to the treatment, but still develop marked plasticity, very similar to that of a normal clay heavily overloaded with grog. On drying and burning, these materials show all the normal properties of clay, such as would naturally be expected within the limits of their physical and chemical characteristics. The better samples are indistinguishable from natural clays by any ordinary physical test, and can be burned in a kiln in the usual manner.

By arranging the materials somewhat in the order shown, all degrees of plasticity may be obtained, from that of a very smooth plastic clay to that of a very short sandy clay, indicating that the difference is one of degree and not of kind between the two extremes.

The essential characteristics of clay forming materials are that they shall occur in nature in a state of very fine subdivision, and that their surfaces may readily be wet by water.

This does not limit clay to any particular mineral. Materials such as silica, aluminum silicate, feldspar, mica, iron compounds, etc., fulfill these conditions and are therefore to be considered as normal constituents of clay.

It has been suggested that clay formed of hard gritty material such as silica, would not have the quality of smoothness found in good natural clays. That this is not neces-

sarily the case is evident when it is recalled that the smallest particle that can be seen under the microscope, or that could possibly be felt between the fingers, still contains many millions of molecules, and that such a particle does not by any means represent the limit toward which disintegration can proceed.

Smoothness under these conditions depends on the size and shape of the particles, and not on the intrinsic hardness of the material of which they are formed. Clays in which the particles have been rounded by weathering and abrasion are naturally the smoothest and most plastic.

That the plasticity of clay is not dependent on the mechanically mixed water is shown by the fact that other fluids develop this property in clay. Among these are anhydrous nitric acid, anhydrous sulphuric acid, absolute alcohol and glycerine.

Each of these fluids is soluble in water, and is therefore able to wet the hydrated clay grain with its attached water molecule, and to produce a disruptive force between the grains. In each case the clay may be dried again and made plastic with any of the other fluids.

Effects of this general type depends both on the nature of the fluid and the nature of the solid. Thus, while both water and oil wet quartz sand, water under suitable conditions will easily displace the oil films from a mass of sand.

On the other hand, both oil and water wet zinc oxide, but in this case the oil will readily displace the water films, forming paint or putty. The resulting mass in this case may be said to be oiled, in very much the same manner that clay is said to be hydrated. This principle is employed commercially on a very large scale in the flotation of metal bearing ores.

Ether, gasoline, kerosene, engine oil, and similar fluids do not wet the clay grains, and therefore are unable to penetrate between them to produce a disruptive force. They do not develop plasticity in clay.

BALANCING OF FORCES NECESSARY FOR PLASTICITY

When mixed with dry powdered clay, these liquids form a film around the clay grain and their disruptive force comes into action, preventing cohesion, so that the mass acts like sand and water, but there is no graduation, or balancing of the forces, as is necessary in order to obtain true plasticity.

The absorption of salts, oily impurities, and other similar materials by clay, seems to be a case of direct molecular attraction between the clay grain and the substances mentioned, similar to that noted above.

The plasticity of unburned clay cannot be altered without altering the molecular structure. Water, acids, alkalies and organic solvents do not remove or destroy the plastic properties of clay. This would probably not be the case were the plasticity of clay due to the presence of some particular chemical substance other than the clay grain itself, or to a true colloidal condition of the clay.

In an artificial mixture where plasticity is clearly due to the presence of a colloid or a viscous fluid, as when ground flint is mixed with glue or a heavy grease, a certain degree of plasticity is obtained at normal temperatures. However, when these mixtures are heated, they will melt down to a thin fluid, which may readily be poured from one vessel to another. This action does not occur with ordinary clay, which cannot be melted in the manner indicated.

Mechanical pressure alone with the use of a liquid of any sort, will produce cohesion and dry strength in clay. This is shown by the action of dry powdered clay in a briquetting or tablet forming machine, or by the compression of the clay under the blow of a hammer which develops considerable strength. In this case the only possible explanation

seems to be direct molecular cohesion, as the action of colloids, soluble salts and organic matter in any way heretofore suggested, requires the use of liquid.

Again, if the plasticity and dry-strength of clays were due to the presence of colloids or organic matter, presumably some clays might be found in which these compounds had burned out before a sufficient quantity of mineral had fluxed to give the body an equivalent strength. Thus we would have clays stronger when dry than when partially burned.

On the other hand, should the fluxing action of the minerals commence before such material had burned out, there would be a sudden rise in strength, followed by a less rapid rise or fall. An examination of a large number of clays has not shown a case of this kind. The curves of strength are smooth.

Organic or mineral colloids, such as glue or sodium silicate, and soluble salts, when added to dry powders in amounts sufficient to produce any notable effects, come to the surface on drying and form a hard shell. This shell is easily recognized and may cause serious cracking. There is no evidence of the formation of such a shell in the drying of ordinary clays, which show a uniform texture thruout when dry.

In view of the foregoing, we seem warranted in considering that plasticity is the result of the balancing of two opposing forces, the direct molecular cohesion of the clay particles themselves producing strength, and the disruptive force of water reducing this strength to a suitable point.

* * *

Lands Large Order for Face Brick

The largest face brick order ever recorded for the southeastern section of the country has just come to our attention. The order calls for 400,000 or more "Dixie Texture Face Brick" of polychrome assortment. The brick are to be used in the construction of the Southern Furniture Exposition Building at High Point, N. C. This building will measure 100 by 208 feet, will be ten stories high and basement, and will cost one-half million dollars to build.

The order was awarded to the Sumter (S. C.) Brick Works, by the board of directors for the firm letting the contract, on account of the beauty of the coloring in brick work made up from Dixie texture brick.

The Sumter Brick Works has grown immensely during the past few years and has evolved from a common brick plant into an exclusive face brick proposition to date. Its product is shipped over five southern states.

* * *

900,000 Emigrants Sail for Home

The New York "American" states that since the signing of the armistice 900,000 emigrants have sailed from New York, most of them bound for homes in southern Europe. Returning aliens, who have saved an average of about \$3,000, include Italians, Greeks, Jugo-Slavs, Syrians, Croats, Serbians, Kurds and Rumanians, and their exodus has nearly depleted labor supply in several mining towns and small industrial centers. The 260,000 sailing in last three months paid \$1,000,000 income taxes.

* * *

Brotherhoods and Miners' Alliance Proposed

It has been announced from Cleveland that an alliance of railroad brotherhoods and united coal miners was proposed at a conference of officials of the United Mine Workers in that city on September 14. Joint action on wage demands is one motive for cooperation, according to the committee.

HOW HAND-MOLDED BRICK *are* MADE *in* ENGLAND

An Interesting Account on Brickmaking in England and a Description of the Process of Manufacturing Hand-Made Brick

By J. W. Overend

ALTHO MACHINERY has superseded the hand in regard to the making of brick, there are yet quite a number of firms who make brick, chimney-pots, etc., by means of the hand. Brickmaking is as old as Adam and at one time all brick were made by hand. The Romans used brick hand-made, both burned and unburned in great profusion, all the great existing ruins at Rome being of brick. At the fall of the Great Empire in Italy the art of brickmaking fell into disuse until it was reborn after a few centuries.

The mediaeval ecclesiastical architecture of old Italy displays many fine specimens of brickwork and ornamental work in terra cotta; decorated friezes and cornices of great beauty being executed in the latter material and all by means of the hand.

The Romans were the first to introduce the making of brick into England, making long thin brick as a kind of wall to bind together their rubble construction. This Roman mode of construction was done right up to the Norman Conquest when stone was largely used as a building medium.

However brick came again, for in the reign of Henry who took unto himself eight wives, and as Mark Twain once put it, if he had only lived long enough he would have doubled it, saw a great revival of brick-making in England and brick was used very extensively. Hand-made brick became a fine art, both moldings and decorations being used on many of the buildings erected during this period, the brick being of the rubber type. With the introduction of machinery into the brick yards, hand-made brick took second place—not that the latter were of an inferior quality but they could not be produced so quickly as the modern brick maker who feeds and unpacks the machines as the case may be, from the Fawcett press, etc., can produce them.

It will be readily understood that the process of brick-making differs in various countries; but it is safe to say the same fundamental principles are followed out. The operation usually adopted in England is as follows: Unsoiling, cleaning, grinding, tempering the clay for the making of the brick.

In regard to tempering, there is still much done on small works by the old system of turning the clay over with shovels, and while adding a small quantity of water, trodding under-foot by horses and men. Of course on all the larger works the pug-mill is utilized.

MOLDING THE BRICK

The method of molding is as follows: Clots of clay are taken from the mill by the pug boy to the men who are molding. They have before them a rough molding bench furnished with a mold, which is an oblong box having two sides and two ends, the size in the clear being approximately 10-in. by 5-in. by 3-in. which fits over a stock board, the later sometimes having a projection which forms the frog of the brick; a strike, or straight edge; water and sand-box, etc.

The man who stands next the boy goes thru to the process

of plaiting walks, i. e. roughly molding the piece of earth for the molder, who thrusts it into the mold, striking it off level, with the strike, which is kept when not in use, in a tub of water. The next performance is that of bearing off, the method of which depends on whether the brick be sand or slop molded. In sand molding the mold is dipped into sand each time and, because the molder never parts with this mold but sends each green brick away on a pallet, it is termed "pallet-molding." But in the other system the mold is dipped into water each time and the mold and brick taken away together.

Each brick is placed in position on the hack barrow, which is a barrow with a latticed bottom. The brick are then wheeled to the hack or hovel to dry. Taking the brick from the molder to the hack is termed "bearing off."

The hacks are long parallel banks raised about six inches above the surrounding land so as to render them dry; the brick are scintled from 10 to 14 courses high; then they are left till dry and ready for burning. During this process the brick are periodically inspected as to state of dryness required.

An artificial way of drying the green brick is by means of the hovel, which is a long low pitched shed, with a floor of thin sheet iron, under which flues are arranged to and fro, rendering the iron hot, hence drying the brick which are placed upon it.

The brick are then ready for burning in either clamps



Typical View of the Strata and Clay Beds. Note Also the Endless Chain Arrangement for Carrying the Clay from the Bank.

or kilns, and according to the system adopted, so they must be prepared. As a case in point for clamp burning the brick must contain a certain amount of rough ashes, so that in themselves they have the fuel necessary for burning

them, and it should be noted that there is no chance of finishing the drying by artificial means; the brick must be left in the hack a longer period than would be necessary in the case of kiln burning.



The Old Hand Mold Process of Making Brick Such as Is Still Practiced Quite Largely in England.

The brick are burned in either the Scotch, Sussex, or Hoffman kiln.

HAND-MADE CHIMNEY POTS

Hand-made brick require care in handling hence their greater cost and one objection is that they are not pressed into one homogeneous mass like those done in a Fawcett Press, but be that as it may they have their lasting qualities. This has been proved by the many old brick buildings all over England which were built before we had gotten machinery of any kind. Not only these, but the brick made by the Romans of old in the dawning of civilization show conclusively that hand-made brick have stood the weathering test of centuries. There is a charm about hand brick making which machine brick making can never give. In some of the brickyards where this class of brick is made there is the hand process of making chimney-pots and when one considers the many patents to prevent smoke in these pots it requires no small effort to get at the resultant.

These pots are cast in molds in two pieces and then after being well bedded, scraped, etc. the pieces are put together and this makes the whole.

In the building era which is now bound to occur in England after the war, there will be a great revival in brick-making and no doubt in many centres hand brick will be made. But as elsewhere the shortage of skilled labor for a long time will be found to be very acute for there has not been any system of training.

Whilst in many cases there is a strong objection to brick for public buildings, this has almost died out for as previously remarked durability and lasting properties are the factors which tell and to build with brick is both

economical, labor saving, and speedy, and the various colors which can now be gotten can be made to give a fascination and a charm.



Director Hines Again Turns to Shippers For Help

Walker D. Hines, director general of railroads, authorized the following statement, asking the further cooperation of shippers and receivers of freight in promoting freight car efficiency.

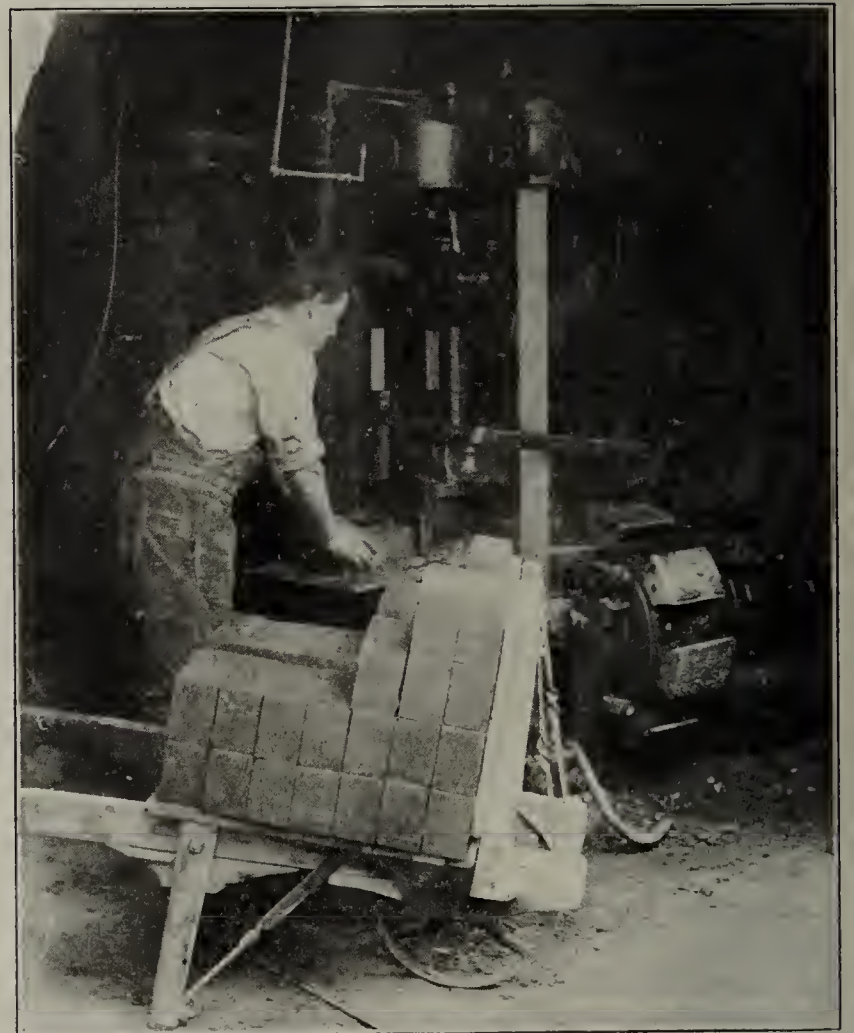
"During the war, no one was more patriotically helpful than the American shipper. With zeal and efficiency he did his part in the common cause.

"The Railroad Administration had excellent opportunity to observe this attitude during the war and has appreciated heartily the subsequent continued cooperation of the great majority of the shippers.

"The time has now come for renewed efforts by both the Railroad Administration and the shippers and receivers of freight so that the nation's transportation services may be rendered with the greatest satisfaction possible under the circumstances.

"An unusually heavy grain and coal movement deferred repair and the construction of public highways in all sections of the country and the concentrated requirements of suddenly reviving business, combined with the usual transportation requirements at this time of the year, threaten a serious lack of transportation facilities unless all parties interested co-operate in securing the greatest possible utility from the existing limited transportation facilities.

"In this connection attention is invited to the following extract from a recent public statement of the President:



This Picture Illustrates a View of the Fawcett Press Which Is Used to a Considerable Extent In English Brick Manufacture.

"We have now got to do nothing less than bring our industries and our labor of every kind back to normal basis after the greatest upheaval known to history, and the winter

just ahead of us may bring suffering infinitely greater than the war brought upon us if we blunder or fail in the process. An admirable spirit of self-sacrifice, of patriotic devotion and of community action guided and inspired us while the



Chimney Pots are Cast in Molds in Two Parts Which Are Later Set Together to Form the Whole.

fighting was on. We shall need all these now, and need them in a heightened degree, if we are to accomplish the first tasks of peace.’

“The Railroad Administration will do its full part. The Car Service Section in Washington and the various regional organizations are striving earnestly to secure a fair and just distribution of the existing equipment as well as to meet the requirements of individual shippers. Of the 100,000 new freight cars which the Railroad Administration ordered constructed, 59,409 had been completed on September 13, and are now in service, and this number is being increased at the rate of over 900 each working day. Instructions have been issued to all Regional Directors to bend every effort to speed up road and yard movements, to secure heavier loading of equipment, to establish and maintain complete and accurate yard checks, to reduce the number of bad order cars, to make prompt delivery to connections, to effect early deliveries at freight houses and team tracks, to reduce the number of freight cars used in the transportation of company material and to expedite the movement of grain cars in terminals. The hours of labor of car shop employes have been increased and every effort is being made, both in railroad shops and in the shops of private concerns to whom the work is being let out, to reduce the number of bad order cars.

“I earnestly urge all shippers and receivers of freight to redouble their efforts to promote freight car efficiency.

“Shippers of freight can assist

1. By loading all cars to full visible or carrying capacity.
2. By prompt loading and release to the carrier.
3. By ordering cars only when actually required.
4. By eliminating the use of railway equipment in trap or transfer service when tonnage can be handled by motor truck or wagon.

5. By reducing the diversion and reconsignment of cars to a minimum.
- “Receivers of freight can assist
1. By prompt unloading of cars and notice thereof to the carrier.
 2. By ordering goods in quantities representing the full safe carrying capacity of cars and disregarding trade units.
 3. By ordering from the nearest available source.
 4. By pooling orders so as to secure full car load.

“A resumption of intensive loading will not merely reduce the number of cars under load but will also relieve congested terminals where it is a question of track room rather than of equipment.

“With a strong concerted effort on the part of the Railroad Administration and the shippers and receivers of freight, it is hoped that during the period of abnormally heavy traffic with which we are now confronted the nation’s transportation needs may be met with reasonable satisfaction to all parties.

“I earnestly ask the continued and even more effective cooperation of all shippers and receivers of freight.”

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Canadian Tariffs

For the information of *Brick and Clay Record* readers, the tariffs on clay products shipped into Canada are published herewith.

Tariff Items	British Preferential Tariff	Intermediate Tariff	General Tariff
*231 Fire brick of a class or kind not made in Canada.....	Free	Free	Free
282 Building brick, paving brick, and manufactures of clay, or cement, n. o. p.....	12½ %	20 %	22½ %
283 Drain tile, not glazed.....	15 %	17½ %	20 %
284 Drain pipes, sewer pipes and earthenware fittings therefor, chimney linings or vents, chimney tops and inverted blocks, glazed or unglazed; earthenware tile, n. o. p.....	25 %	32½ %	35 %
285 Tile or blocks of earthenware or of stone prepared for mosaic flooring.....	20 %	27½ %	30 %
286 Earthenware and stoneware, viz. Demijohns, churns or crocks.....	20 %	27½ %	30 %
287 Tableware of china, porcelain, white granite or ironstone.....	15 %	27½ %	27½ %
288 Earthenware and stoneware, brown or colored and Rockingham ware; “C. C.” or cream-colored ware, decorated, printed or sponged; and all earthenware n. o. p.....	20 %	27½ %	30 %
289 Closets, urinals, basins, lavatories, baths, bath tubs, sinks and laundry tubs of earthenware, stone, cement or clay, or of other material.....	20 %	30 %	35 %
296 Clays, including china clay, fire-clay and pipe clay not further manufactured than ground; ganister and sand; gravels; earths, crude only.....	Free	Free	Free
300 Crucibles of clay, sand or plumbago.....	Free	Free	Free

*Free from 7½ % war tax.

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Must Face Ten More Years of H. C. L.

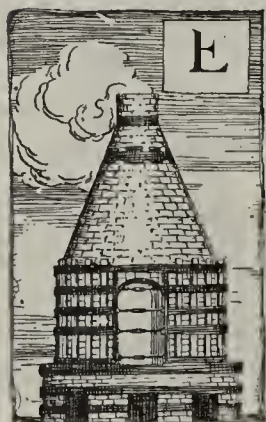
It is announced from St. Louis that in the opinion of Prof. Frank Taussig, of Harvard University, former chairman of the United States Tariff Commission, the United States must face the certainty that for ten years or more the cost of living will be greater thruout the country than under prewar conditions.

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products Such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

CERAMIC DAY A HUGE SUCCESS AT CHICAGO CHEMICAL SHOW



EQUALLING AT LEAST, the successes of the past years, the Fifth Annual Exposition of Chemical Industries closed its week at the Coliseum and First Regiment Armory, Chicago, with an excellent attendance and a large list of exhibitors. Thruout the entire week of September 22 to 27, manufacturers of materials and supplies which came within the realm of chemistry were on hand to show and explain to visitors models and samples of their product. Nearly every type of equipment imaginable relating some way or other to chemical manufacture was shown. All told there were three hundred and fifty-six exhibitors representing a highly diversified list of products, forty-two of which were related to ceramic manufacture.

Meeting jointly with this exposition were such organizations as the American Ceramic Society, the American Electro Chemical Society, the Technical Association of Pulp and Paper Manufacturers, the American Steel Treating Society and the American Mining and Metallurgical Engineers. Symposia and discussions were the chief features of these special meetings.

To those directly interested in the chemical industry, the expositions proved an excellent opportunity to study the various lines of chemical equipment and compare the merits and service of different manufacturers handling the same product. To others it was of intense interest and an education as to the importance of the chemical industry and the extent to which it enters into the program of our daily life.

GREAT INTEREST SHOWN IN A. C. S. CHARTS

The American Ceramic Society maintained a booth on the mezzanine floor at the south end of the Coliseum. Charts showing the classified list of the branches of the ceramic industry, industries dependent upon ceramic products, and the membership growth of the American Ceramic Society, were exhibited at the booth. Many people manifested a great deal of interest in these charts and studied them thoroughly, realizing for the first time perhaps, the immense scope of this field. Unlike other years, the exhibitors of ceramic products were not segregated, but on the other hand, scat-

tered thruout various parts of the Coliseum and First Regiment Armory.

Three manufacturers of chemical stoneware maintained splendid exhibits of their complicated designs of this product. The General Ceramics Co. showed miniature exhibits of various types of installations such as centrifugal pumps, exhausters, etching machines, and other specialties. The United States Stoneware Co. exhibited its line of special acid resisting-glaze stoneware, and the Maurice A. Knight Co. had on display some of its more important products, including nitric receivers, acid brick, pipe, acid jars, kettles and other special wares. This firm occupied a double booth and maintained a very elaborate exhibit.

CHEMICAL PORCELAIN ON EXHIBIT

The chemical porcelain manufacturers were also on hand with an exhibit of their widely diversified lines. The Herald China & Pottery Co., manufacturers of well known Coors porcelain, showed a line including crucibles, combustion boats, evaporating dishes, funnels and other specialties. The Ohio Pottery Co., and the Guernsey Earthenware Co., two large manufacturers of high grade chemical porcelain, also maintained elaborate exhibits, displaying their large line of scientific porcelain.

One of the most attractive booths in the entire exposition was that maintained by the Corning Glass Works, who displayed their line of well known glass specialties, including laboratory glassware, Pyrex glass baking dishes, colored signal lights, and so on. The Macbeth-Evans Glass Co., besides showing its line of chemical glassware, exhibited a large lens, such as is used by the government for its lighthouses. The Whitall Tatum Co., and various laboratory supply firms also maintained exhibits including glassware. The Bausch and Lomb Optical Co. had on hand in



Exhibit of the Maurice A. Knight Stoneware Articles Displayed at the Chemical Exposition Held in Chicago.

its booth large chunks of optical glass for display purposes.

The Bureau of Mines maintained an exhibit included in which were many samples of ceramic products such as beautiful vases with crystalline glazes, various types of

refractory brick such as chrome, magnesite, bauxite, carborundum and silica.

The Denver Fire Clay Co. maintained a booth wherein it displayed its various specialties and fire clay products. The B. Mifflin Hood Brick Co. showed its line of acid proof specialties such as are used in Glover and Gay Lussac towers.

MACHINERY MANUFACTURERS ALSO HAD DISPLAYS

Besides the above ceramic products, there were on exhibit many specialties such as are used in the manufacture of this ware included among which are scientific instruments such as draft gauges and pyrometers, which were exhibited by the Brown Instrument Co., Taylor Instrument Co., Thwing Instrument Co., the Bristol Co., and the Beighlee Electric Co. Chemicals exhibited by the Rollin Chemical Corporation and the Roessler & Hasslacher Chemical Co., and others, proved of interest.

The Philadelphia Textile Machinery Co., and the Philadelphia Drying Machinery Co. displayed miniature dryers, such as can be used in the ceramic industries, which created quite a bit of interest among the visitors. The Armstrong Cork Co. displayed miniature kilns, boiler settings and so on wherein the use of their insulation brick can be applied. The Celite Products Co. maintained an interesting display, the feature of which was a small electric furnace covered by an ordinary fire brick and one of their Sil-o-cel brick. Upon touching the fire brick it was found that the heat was very intense but on the other hand, very little heat was permitted to radiate from the Sil-o-cel brick, which were not nearly so hot.

Interest was displayed in the exhibits of the Carborundum Co., and the Norton Co., who exhibited chunks of beautiful carborundum crystal used in grinding wheel manufacture.

CERAMIC DAY BIG EVENT

One of the important events of the Chemical Exposition was "Ceramic Day" which was held on Wednesday, September 24. A very elaborate program was arranged, which included a list of papers, discussions, moving pictures, and a banquet dinner. The first session was held at ten o'clock, at which W. D. Gates presided as chairman. The first paper on the program was that of Ross C. Purdy, who showed the possibilities for research and the great need for superior refractories.

The second paper was that of Prof. Chas. F. Binns, which was read by F. B. Ortman, in the former's absence. Mr. Binns said in his paper:

"The American Ceramic Society was founded in 1899, at Columbus, Ohio, when a small group of scientific men, interested in the problems of the silicate industries, gathered together and formed a permanent organization. Beginning with the report of that meeting a volume of Transactions has been published each year for nineteen years. In addition to the annual volume, a manual of Ceramic Calculations, as an appendix to Volume II, and the works of Herman A. Seger, translated from the German were published.

"Clays and glazes were the earliest interests of the Society but were soon followed by all branches of the silicate industries.

"The growth in membership was steady but not large until about 1917, when conservatism yielded before a vigorous campaign under the Membership Committee, resulting in an increase of over 200, a movement which has continued up to the present when there are 1,156 members.

"In 1918 the annual volume of Transactions was superseded by the Journal of the American Ceramic Society, with G. H. Brown as editor. There has been a gratifying

improvement in this journal during the year and three-quarters of its existence, and it now ranks with the scientific journals of much larger societies.

"Local sections have been organized in places where there are many ceramists, who meet frequently for the discussion of papers and for good fellowship. More recently indus-



A Picture of the Booth at the Chemical Exposition Wherein the U. S. Stoneware Co. Showed Representative Samples of its Chemical Stoneware.

trial divisions have been formed for the better grouping of interests at the annual meetings. It is probable that hereafter there will be one or two general meetings and the rest of the time will be given over to divisional meetings.

"The future holds much promise for the Society and for the industry it represents. Conservation of fuel will be studied, the labor problem met, electrical energy utilized to the utmost, and the ceramist will seize the materials provided by the bountiful earth and will make them his servants."

DR. WASHBURN'S SUBJECT

Dr. Edward W. Washburn read a paper on the subject of "Some Aspects of Scientific Research in Relation to the Glass Industry," which contained in the main the following: "With the development of methods of producing, controlling and measuring high temperatures in the laboratory, our knowledge of the chemistry and physics of high temperature processes has steadily increased and applications of that knowledge have naturally followed. The stimulus of the war has aided greatly in bringing together the practical men of the factory and the scientists of the laboratory. But in glass making we know *how* today much better than we know *why*. Progress demands that we know *why*. In industrial laboratories the work to be done may be roughly classified under three headings: (1) routine testing, of raw materials and products and similar control work; (2) works problems including the curing of troubles and the improvement of processes and products; (3) fundamental research to find out the *why* of the operations or to secure quantitative scientific data covering materials, processes and products. In the glass industry almost all of the fundamental research work remains to be done. For example, very little is known of the relations between (1) viscosity and (2) temperature and composition, altho viscosity has long been recognized as of great importance in making and working glass. Surface tension and vapor pressure and even density have scarcely been studied at all. Of the reactions and compounds we know almost nothing. The nature of gases remaining in solution is almost unknown, as well as their effect, if any, on the properties of the glass. Many unanswered questions are referred to including rela-

tions between composition and properties, cause of greenish color resulting from substituting soda for potash, the condition of copper in glass, the cause of pink color from manganese, and red in chrome pink, the function of arsenic. There are three types of laboratories to carry out such researches; (1) industrial, (2) government or research foundations and (3) University. The endowment of research professorships in glass would have a very stimulating effect."

A DISCUSSION OF OPTICAL GLASS

The afternoon program was transferred from the First Regiment Armory to a room in the New Southern Hotel where it was continued, starting with a paper by R. J. Montgomery, who discussed twenty-three types of optical glass. He said:

"A distinction should be made between optical and other kinds of glass. By the word optical we mean those glasses which are selected for certain purposes because of their behavior towards transmitted light. This behavior is primarily due to its composition and not to its shape. Measurements of the index of refraction and dispersion classify the optical glasses into sub-divisions. In ordinary glass the composition may be changed to obtain satisfactory melting qualities but in optical glass each change in composition will change the optical properties. On this account optical glass is much more difficult to make as the optical properties must be held constant within very narrow limits."

"One hundred or more optical glasses have been listed but practically all of them may be placed in twenty-three groups. The ones in each group are quite similar in composition and in method of manufacture. They may be shown graphically by plotting the index of refraction against dispersion on coordinate paper. The index of refraction may vary from about 1.45 to 1.96 while the dispersion may vary from about 20.0 to 70.0. From the plotted information it is easy to determine the fields in which each glass constituent is used in the largest amount. We therefore, have the lead field, the barium field, the soda-lime field, the boric acid field, etc. Approximate compositions are apparent and new glasses may be developed by interpolation between the compositions of known glasses."

The next subject on the program was a very enlightening talk by Douglas F. Stevens on the part that the brick and tile industry played in chemical manufacture. Besides showing how acid proof brick were being used in the chemical industry he urged the necessity of greater attention and more research in the brick and tile field on the ceramic industry.

A. Malinoszky talked on fused sillimanite products, giving some new matter on this important subject.

CERAMIC DECORATIVE PROCESS

One of the most interesting papers of the whole program and which was of an unusual nature, was that of Frederick H. Rhead on "Historical and Modern Ceramic Decorative Processes," accompanied by stereoptican slides. Following the reading of this paper, an abstract of which is given below, the Society expressed its desire that more papers of this nature be included among the papers read at the annual meeting.

"The most commonly known ceramic decorative processes are divided into ten broad groups. Each group is briefly reviewed with particular reference to typical examples ranging from primitive or early works to modern productions. The processes of primitive medieval and modern potters are discussed from a practical point of view. A description of various methods, tools and the physical condition of the materials will be given, while the artistic and commercial de-

velopments are suggested by illustrations of examples referred to in the paper.

The groups enumerated are as follows:

- First: Incised and etched surface decorations.
Examples referred to: Early British, Chinese, Italian Sgraffito, Modern, Porcelain, Cast Sgraffito, and commercial tile treatments.
- Second: Modeled and relief surface decorations.
Examples referred to: Ancient Chinese, Roman, Eler's style, Pallissy, German stoneware, Wedgwood, Modern.
- Third: Slip processes.
Examples referred to: Old English, Toft, European, Modern Slip Decorations, Pate-sur-pate.
- Fourth: Underglaze processes.
Examples referred to: Grecian, Italian, Mojolica, Chinese, Japanese, Modern European, Commercial processes.
- Fifth: Glaze manipulation.
Examples referred to: Chinese, Italian, European, Modern.
- Sixth: Plain glaze treatments.
Examples referred to: Chinese, Modern.
- Seventh: Lustre processes.
Examples referred to: Persian, Spanish, Modern.
- Eighth: Overglaze decorations.
Examples referred to: Chinese, European, Modern.
- Ninth: Sculpture.
Examples referred to: Chinese, Italian, European, Modern.
- Tenth: Architectural pottery.
Examples referred to: Babylonian Bricks, Della Robbia, Mexican, European, American, Italian Mosaic.

GLASS MANUFACTURE

The next paper which was read by Dr. Alexander Silverman, was on the subject of buying chemicals on analysis for glass manufacture. This was followed by a discussion by J. C. Hostetter. Mr. Hostetter's talk was profusely illustrated by stereoptican slides, showing the equipment used in the glass factory which included machines with a vertical as well as horizontal movement used for the stirring of glass, furnaces, methods of mixing materials, and other equipment. He also mentioned that the production of optical glass at the time of the armistice was ninety thousand pounds per month. The above talk ended the day's program of papers and discussions and at six o'clock, sixty-two members gathered in one of the rooms of the New Southern Hotel for a banquet, a feature of which was the introduction of three prominent men connected with the glass industries in England. One of the speakers, Dr. Morris W. Travers, told of the British scheme for cooperative research.

"With a view to promoting the foremost of cooperative research associations, and the promotion of technical research in connection with industries the British Government has adopted the following plan:

"A department of scientific and industrial research has been established and the sum of one million pounds has been placed at its disposal, which may be expended over a period of five years.

"Groups of manufacturers desiring to participate in the scheme are required to form research associations, organized as non-profit sharing limited liability companies, under the British companies act, and to submit the memorandum and articles of association to the department for approval. The management of the association is vested in the hands of a Board of Directors, the majority of whom are elected in the ordinary manner, with a certain number of coopted members, and a further number nominated by the department. However, the majority of the board consists of elected members. The shareholders in an association are firms engaged in the industry, agreeing to subscribe to the association for a period of five years, and approved by the Board

of Directors. It has not been found possible to arrive at any decision as to relationship between the amount of the subscription and the capital or annual turnover of a subscribing firm.

"The amount which any firm may subscribe to an approved association is free of income and excess profits duty, and to the income derived from such subscriptions the department may add an equal or greater amount, depending upon the position of the industry and its importance to the state. Thus the contribution of the department to the funds of the Glass Research Association, now in process of formation, is several times the amount of the income derived from the subscriptions of constituent firms, the industry being considered to be a key industry.

"Each association will have as an executive officer a director of research, and he will be required to submit a program and estimate of cost for the year, and annual reports on work completed or in progress. The department will act as a means of liaison between different research associations.

"It is the policy of the British Government to assist in the establishment of these research associations, but to leave the management of them entirely in the hands of the industries, so that, five years hence, when the arrangement terminates they will have become permanent organizations, strongly supported by the industries, and no longer needing government support."

Other speakers from England included Prof. Turner of the University of Birmingham, and Mr. Conway. It was also at this banquet where a paper prepared by R. R. Danielson, on "The Cleaning and Pickling of Iron and Steel for Enamel Purposes" which had been omitted from the regular program, was read.



Ten Kilns Added to Yellow Ware Production

The last of the idle clay working plants in the East Liverpool, Ohio, district is to be placed in operation by the D. E. McNicol Pottery Co., of that place. A deal has just been completed whereby the McNicol interest comes into possession of the ten-kiln plant of the American Electric Porcelain Co., in the East End, which has been inactive since that corporation removed its operations to Parkersburg, W. Va. Under the new arrangement these ten kilns will be devoted exclusively to the manufacturing of Rockingham and yellow ware. The McNicol company has been operating a two-kiln yellow ware plant in East Liverpool for many years, but as the demand for this class of ware has been increasing so rapidly of late the need of a greater production was soon manifested. The idle plant is one of the most modern in the pottery district and the buildings are comparatively new, being erected about ten years ago. When the electric porcelain interests consolidated their manufacturing interests in Parkersburg a number of plants in the East Liverpool territory were of necessity closed. One by one they have been bought up by other interests and placed in active operation. The plant taken over by the McNicol interests is the last property of the original owners to be acquired, so that now there is not an idle clay working plant in the East Liverpool section, save possibly one small two-kiln plant.

The McNicol Pottery Co. has been active in putting thru an expansion program during the last few years. Their first extension was when they took over a pottery at Clarksburg, W. Va., by purchase and the formation of a separate corporation. This business has been successful from the start. Their yellow ware plant in East Liverpool is the only one in the Eastern Ohio territory outside of

Akron and Zanesville manufacturing that class of merchandise. The only other plant making yellow ware was the Patterson Pottery, in Wellsville, Ohio, but when the firm quit that line and closed its plant it was taken over not long ago by a new corporation known as the Sterling China Co., and composed of East Liverpool interests. The general demand for yellow ware in recent years has been such that present kiln capacity has not been sufficient to take care of all business, hence the action of the McNicol interests in adding ten more kilns to the production. The latter will greatly broaden the yellow line and a number of specialties will be added together with a number of staple articles which were taken from the list when the War Industries Board ran a fine tooth comb thru the list of manufactured articles, leaving only those of necessity.

The Sterling China Co., however, has an improvement program under way for its Wellsville plant which will be put into effect at once. The clay shops and warehouses are to be enlarged, and additional machinery placed in the former department. An additional kiln is also to be built. The firm will also go into the two-fire business, as its product has been marketed as a one-fired proposition heretofore. A general line of hotel ware will be continued as the output of the Sterling plant.



Domestic Generalware Production Will Reach New High Level

Judging from the way new business is being received by the various general ware pottery manufacturers of the country, all plants will be kept exceptionally active thruout the balance of the year filling current orders. No small amount of business has also been received by the different potteries for first quarter shipment next year. This business is coming from all parts of the country, the division of orders being very well distributed. In the East Liverpool, O., district, there is sufficient business now on hand to insure steady operations thruout the balance of the year, and at times the volume of orders received in one mail is enough to operate for a week. This does not include back or unfilled orders on file, which as a matter of fact will require months to fill.

It is conceded that unless buyers hasten to place their orders for fall or holiday trade there will be little chance of such business being shipped if there is much more delay. As a rule the wise jobbers and department store buyers of domestic pottery know the crowded condition of the generalware plants and have acted accordingly by anticipating their requirements months in advance, be it a package or a carlot shipment. There are some who, however, have delayed in this anticipation and it is this class of trade that will regret their tardy action.

The adjustment of the potters' wage scale has been looked upon with favor by all parties concerned, and especially by the buyers. There is reason for believing that during the balance of the season the buying trade will be more active in placing requirements for future delivery than ever before. The manufacturers are quite well satisfied over the pleasant turn of affairs, and the workers also share in the situation in this regard.

What is now most desired by manufacturers and buyers is an increased production. Admission is made that this is possible in some instances. Should production be increased it will give manufacturers an opportunity to seek or take care of a larger volume of orders. That there is an expanding market for American pottery is admitted by all identified with the industry. At the same time, a greater pro-

duction would result in a larger wage being earned by the pottery workers and the distribution of ware would of necessity be on a larger scale. Where plants are unable to work up to capacity the distribution is of necessity lessened.

During the last year a number of improvements have been made in the industry which has tended to increase production and at the same time lessen the burden of workers. The successful operation of a continuous or tunnel kiln at Sebring has increased capacity, while improved stove rooms and the successful operation of sagger making machines has aided manufacturers to overcome a shortage of this product.

There is no reason to doubt that the value of the domestic generalware production for the current fiscal year will reach a new high level. While it is true that selling prices are higher than heretofore, which fact must be taken into consideration in computing value of shipments, the production has been slightly increased here and there by additional kiln capacity. Additional decorating kilns have been added to the East Liverpool district, while enlarged bisque and glost kilns have been erected at several plants elsewhere in the Eastern Ohio territory.

The erection of a new seven-kiln plant at Scio, O., by East Liverpool and Scio interests will also aid in value of pottery production during the current fiscal year, altho operations cannot be started in this new plant until early in the new year. A general line of dinnerware will be produced in this new plant.

It is announced that the Sanitary Potters Association, which has just concluded a brief summer session at Atlantic City will hold its annual meeting in Pittsburgh next February. Since the association signed its bi-ennial wage agreement with the National Brotherhood of Operative Potters last fall the Sanitary Pottery works have been granted an advance of forty per cent. over that scale. The relations between the sanitary manufacturers and the workers is admitted to be most pleasant. General business with the sanitary branch of the trade is more active now than has been experienced since the beginning of the war. This is due to increased building activity thruout the country, and some plants have been sold up for three months.

More new dinnerware shapes will be shown by generalware manufacturers next December than in years past. Probably a dozen or more new plain designs will be offered the trade. Modelers have been exceptionally active thruout the summer designing, and deliveries of their work is now in progress. The bulk of the new shapes will be of the plain design, altho here and there a new fancy shape will be offered. The new plain shapes will permit the widest latitude in decorating, and in this respect the manufacturers have been quick to order the highest class offerings of the decal manufacturers. In the majority of instances, border decorations will predominate.



Pottery Works at Medicine Hat, Alta.

The Medalta Stoneware, Ltd., of Medicine Hat, Alberta, have a modern plant where, by electric drive, modern appliances and natural gas fired furnaces heated to 2,300 degrees, pottery is turned out in large quantities. The plant covers a considerable area, the building being of brick with concrete floors. The large kiln room is fireproof with steel roof. All the machinery is operated by electric motors, their being fifteen altogether.

The Medalta Stoneware, Ltd., started operations in May, 1916, and employed twelve men. They now employ forty men and are producing "4,000 gallons" of stoneware per day. The clay used is a very fine quality. It is first dis-

solved into a liquid resembling thick soup. This is put thru a fifty mesh brass wire screen and run into a large tank. An agitator in the tank keeps the liquid stirred up and prevents the settling of the clay.

The liquid is then pumped thru a two-inch pipe to the clay presses by heavy duty twin pumps. These deliver the liquid clay into the filters at a pressure of eighty pounds. There are two presses each containing seventy-two press cloths. Each press cloth consists of two yards of twelve ounce duck. The water under pressure is forced thru the press cloths which retain the clay.

Each press when full contains about three thousand pounds of washed or purified clay. It is then put thru the pug mills and tempered for use.

The tempered clay is sent to the jiggerman who then makes the various articles required in plaster of paris molds where it is allowed to stand for twenty-four hours afterwards being placed in the dryer. Under the dryer are fifteen thousand feet of one and one-fourth steam piping. A 40 h. p. boiler is used for heating purposes.

After forty-eight hours the pottery is thoroly dry. It is then glazed by being dipped in special glaze vats and sent to the kiln room. This room contains four large circular kilns of fire brick construction reinforced by iron bands. Natural gas is used for burning. It is found to be an ideal fuel for this class of work. About seventy-two hours are required for burning and about the same time for cooling. The heat is put on gradually at first but is increased every three hours until it reaches 2,300 deg. Fahr. At this point of heat the clay vitrifies and the glaze sets.



Among the Different Potteries

The Van Pottery Co., Trenton, N. J., recently formed with a capital of \$125,000, has inaugurated preliminary operations at the former plant of the Shaw Pottery Co., Parker Avenue, near Olden Street, acquired from the receiver of that company, following its petition in bankruptcy. The new organization has modernized the plant and installed new mechanical and operating equipment for greatest efficiency in production. The company will manufacture a general line of hotel china ware, specializing to a large degree in the production of unglazed decorated ware. It is planned to develop a capacity output within the next few weeks, giving employment to about 45 persons for initial work. The new company is composed of Oscar B. Van Fleet, president and treasurer; Charles Macauley, Sr., vice-president, and J. Albert Homan, secretary. Mr. Van Fleet, who with Mr. Macauley will be in active charge of the organization, has been identified with the Mercer Pottery Co. for some years past, acting as sales manager for this company; he is also interested in the printing establishment of Harrison & Van Fleet, a local organization. Mr. Macauley is also well known in pottery circles and has been engaged in different branches of the business for the past 25 years. For some years past he has been superintendent of the plant of the John Maddocks Sons' Co., Trenton. It is understood that James Shaw, head of the Shaw Pottery, has removed to Western Pennsylvania, since the recent business difficulties.

The American Pottery Corporation, recently formed with a capital stock of \$2,000,000, divided into \$500,000 of seven per cent. preferred stock and an issue of \$1,500,000 common stock, while operating the former Willets pottery in Trenton, N. J., with a capacity of thirteen kilns, will manufacture three lines of ceramic merchandise. The main feature of the business will be that of "Willets

Belleek" ware. A general line of sanitary pottery will also be made and in addition the corporation contemplates entering the manufacturing of tiles from a patented process. In the making of tile, it is said that the firm will not have to burn the tile as is now done, but after it is pressed it will be permitted to dry, and then the stock is ready for immediate use. The officers of the company are: President, Charles T. Hancock; vice-president, Francis J. Phillips; treasurer, William H. Plane. The board of directors consists of the officers, and includes F. J. Leuckel, Clifton Reeves and Paul C. Boving. The claim is made by the company that the entire output of the china ware department has been contracted for a period of five years. Hotel ware will also be produced in this plant.

Encouraging reports of trade conditions were presented at the regular monthly meeting of the Sanitary Potters' Association, held at Atlantic City, N. J., September 16. It was set forth that prosperous conditions are evidenced in all branches of the industry, with orders booked for maximum output under 90 days ahead; there is every indication of a continuance of this trend of affairs. The different manufacturers reported a scarcity of good labor, and this is the one factor which is acting to retard desired accomplishments. Relations at the present time with employees are very satisfactory and thoroly favorable, due to the two voluntary increases in wage scales, aggregating 40 per cent., since the biennial agreement was signed last fall. The next meeting will be held at Pittsburgh, and the annual convention will also be held in this same city next February. A. M. Maddock, Trenton, N. J., is president; George W. Bowers, Mannington, W. Va., vice-president; James J. Dale and George C. Dyer, both of Trenton, are treasurer and secretary, respectively.

The pottery situation at Trenton, N. J., continues encouragingly. The different plants in the wide majority are busy—very much so, for orders are coming in at a fine rate. The general ware potteries are operating at a good point, and all kinds of chinaware, decorated and plain is in active demand; large shipments of material are leaving the city for all parts of the country. The sanitary ware production is growing better and better, and things during the past few months in this line of work have taken on a much brighter aspect. Stocks in reserve have been drawn on as a result of the building movement; the export call is good, and all in all, this branch of the industry will soon come into its entire own. The porcelain works show no signs of slackening, and capacity production in this line obtains at the majority of local establishments. Such items as spark plugs, electrical porcelain goods, and numerous other specialties are experiencing a good call.

Pottery manufacturers are now making reservations for space during the annual Pottery and Glass Exposition which is to be held in Pittsburg, Pa., next January. Among the firms which will display their lines are the following: Taylor, Smith & Taylor Pottery Co., Chester, W. Va.; Carrollton Pottery Co., Carrollton, Ohio; A. E. Hull Pottery Co., Crooksville, Ohio; Crooksville China Co., Crooksville, Ohio; Hall China Co., Vodrey Pottery Co., Potters Co-Operative Co., D. E. McNicol Pottery Co., West End Pottery Co., Smith, Phillips China Co., of East Liverpool; Mayer China Co., Beaver Falls, Pa.; Steubenville Pottery Co., Steubenville, Ohio; Summit China Co., Akron, Ohio.

On account of increased wages and continued advance in raw materials, decorating supplies and the possible future advance in fuel, pottery manufacturers may soon be compelled to increase their selling lists. While no official announcement has been issued to buyers, the trend of con-

ditions are such that revision of selling lists will be a matter of necessity. In some departments pottery payrolls under the new schedule of wages starting October 1, will show an increase of close to ten per cent. above the last previous payrolls. These increases do not include any increased outlay for materials or other overhead charges.

James L. Jensen, assistant manager of the Empire China Works, Brooklyn, N. Y., writes that the plant is working night and day to take care of the extra fine demand for its products at the present time. The company anticipates doubling the output of its plant in the course of two or three months. They have recently installed a large "Hurricane" dryer, and erected a new two-story building. They are planning to put a new stone colored insulator on the market to be used for cores in spark plugs.

The Thomas Maddock's Sons Co., Trenton, N. J., manufacturer of sanitary earthenware, is recommending courses of study in ceramic work to its employees, calling attention to the branches of instruction which the local school of industrial arts is offering in this connection. Suggestion is made that prospective students enroll as employees of the company; the monthly reports will be sent to the firm, and which, in turn, will pay for the course of instruction taken. The company is planning to inaugurate work at its factory evening schools on October 6.

Manager K. P. Snyder, of the Louisville (Ky.) Potteries Co., reports a very fair demand for flower pots and stoneware. Mr. Snyder said: "Amateur brewers are creating a demand for jars and crocks, such ware being in much better demand than it had been figured. Business during the past two weeks hasn't been quite as active as it was, but we are well satisfied. Our clay mines at Huntingburg are working full, and we are using the output ourselves."

New stove rooms are being installed in the plant of the National China Co., at Salineville, Ohio, which plant is under the management of Samuel Larkin. Other changes are being contemplated at this plant with a view of increasing capacity. General volume of business with this concern is pronounced excellent, and shipments are being made with promptness.

The plant of the New Jersey China Pottery Co., near the Southard Street bridge, Trenton, N. J., known as the old Willets Pottery, has been acquired by New York interests, operating under the name of the American Pottery Co. The plant has been idle for about two years past, and will be reopened by the new owner at an early date for the manufacture of general ware and a patented tile. It is said that about 300 persons will be employed for initial operations.

In order to assist their employees, the officials of the Steubenville (Ohio) Pottery Co. have purchased a number of building lots and will immediately erect homes thereon for their employees. The company is the first of the pottery interest to announce a plan for better housing facilities for their workers. The homes that will be erected will either be leased or sold to the workers on nominal terms.

The Standard Sanitary Mfg. Co., Pittsburgh, Pa., has recently resumed operations at its plant on Preble Avenue, for the manufacture of sanitary wares. The plant has been closed down since the armistice was signed.

Mexican Art Pottery is now being imported into this country, and is finding a rather ready demand, because of its novel features. There recently located in Mexico a family of pottery workers—mother, father and ten children, and the traveler who discovered the family soon located a "whole nest" of other family pottery workers and who had large stocks on hand. These were bought up quickly, and now the product of these various families—

and there are many of them in that particular district—has been contracted for and will be placed on sale on the American market.

The regular fall meeting of the Potters' Club was held in the Ft. Pitt Hotel at Pittsburgh, Pa., recently when discussions followed relative to the report of the Labor Committee of the United States Potters' Association in reference to the recent wage conference at Atlantic City. The discussion was preceded by a dinner.

Prices of a number of raw materials used in the manufacturing of pottery are increasing, as shown by new lists which have been received by the trade within the last few months. Some of the raw materials recently touched new high levels, exceeding the market prevailing even during the war.

A continuous kiln is being erected at the plant of the Florentine Pottery Co., at Chillicothe, Ohio, which will tend to increase the capacity of that firm. Additional warehouses are also being built, these being the most modern that could be adopted for warehouse purposes.

Clay, pottery and china concerns will be interested in the announcement that the Memphis Queensware Co., one of the active and large wholesale and retail china ware houses of Memphis, Tenn., has been acquired by the Stratton-Warren Hardware Co. Figures have not been given out but the deal is reputed to be several hundred thousand dollars.

News was recently received from Paducah, Ky., of the organization of the West Kentucky Ball Clay Co., at Hickory, Ky., with a capital of \$45,000, the incorporators being W. S. Hargrove, J. J. Allen and Conley Albritten. Western Kentucky has been producing some excellent clay, and the industry has been growing rapidly in the Paducah district.

Wm. T. McNutt, of East Liverpool, Ohio, and also president of the Allbright China Co., of Carrollton, Ohio, with several business associates, has announced his intention to erect a seven-kiln pottery at East Liverpool at an early date. The plant will cost upwards of \$100,000 and will be ready for operation before the end of the year.

The California Pottery Co., San Francisco, Cal., announces the removal of its office from its former location at the yard, 12th and Otis Streets, to Room 825 Chronicle Building. The company's yard has been removed to corner of 11th and Harrison Streets.



British "Tell the Worker" Movement

Facing perhaps the greatest industrial and trade crisis in the history of the country, the commercial leaders of Great Britain are bending every effort to speed up production. One of the latest developments, according to the American Chamber of Commerce in London, is a movement to bring home to the workers the dangerously critical position in which Great Britain is now placed because of her dropping output.

The big business men and commercial authorities of Great Britain know that exports are the life blood of British trade, but many a worker does not seem to grasp the connection between British exports and the price of his daily loaf of bread or his suit of clothes. He seems to fear that the demand for increased output may be a movement started by the employers to increase their own profits at his expense. He also has a tendency to feel that the less he does, the more work there is for the next man. All this talk about maintaining Great Britain's place as a world trader is a rather nebulous consideration to him, which he seems to

regard more as a question of national pride than of vital necessity to him and his family.

The new spirit which is being widely urged is that employers should have "heart to heart" talks with their work people, and that Members of Parliament, the members of the clergy and financial experts should give their first attention to making the working man understand in his own simple terms the necessity for raising the country's output in all directions. The London "Times" is particularly active in this movement.

Another factor which is receiving attention at the moment, is the profiteering that has been going on, and the steps which are being taken by the Government to check it. At the same time, the American Chamber adds, the Government itself is being severely criticised and popular sentiment is highly aroused over Government expenditure and national extravagance.

The "Times" for instance is running daily an important column headed "The Road to Ruin," under which the huge outlay of Government funds is subjected to examination given wide publicity.

The latest developments in the strike situation indicate that this movement to impress upon British labor the significance of the production crisis is making itself felt. The attempted police strike was a fiasco, the coal strike is settling, and the Triple Alliance of railwaymen, miners and transport workers have adopted a resolution postponing, and practically rejecting, the policy of "direct action" (in other words strikes) to influence Government decisions.



New York State Employment in August

The increasing of factory employment which started in July continued in August. The total number of employees reported by manufacturers in New York State was about two per cent. greater in August than in July, and the total was still affected by vacations in some industries. All general divisions of manufacturing either remain practically constant or show increased activity during the month.

These statements are based on the preliminary tabulation of the August reports received by the Bureau of Statistics of the New York State Industrial Commission from 1,463 manufacturers who employ a total of more than a half million workers.

The industry groups showing the chief gains are the stone, clay and glass products groups, the metal industries, wood manufacturers, and textiles.

The ten per cent. increase in the stone, clay and glass products is mainly due to resumption of work by several firms in the glass industry after the summer shut-down, noted in July. Some smaller glass firms were still closed for repairs and vacations in August. The cement, plaster and brick industries in general show no change in August over July. Somewhat larger working forces were reported in tile and porcelain ware, stone cutting, and carbon and abrasives.



The average weekly increase in the stone, clay and glass plants of New York City during August, 1919 was \$24.11, according to a report just made by the New York Industrial Commission. This report also announces a new record for the weekly earnings of factory workers in August, in New York State. Reports from 1648 manufacturers in New York State to the Bureau of Statistics of the State Industrial Commission show that the weekly amount paid to employees averaged \$23.85 in August. The previous high mark was \$23.18 for last December.

The SUPERINTENDENT

Helpful Hints for Practical Men
Whose Problem is Maximum
Production With Minimum Cost

Attaching Hose Couplings

The best method, which has come to the writer's attention, of fastening a metal coupling or a splicer in a piece of rubber hose is the one to be described whereby the coupling is, in effect, vulcanized into the end of the hose. The first step is to support the end of the hose securely. This may be done, as suggested in Fig. 1, by laying the hose on the top of a bench and clamping a block of wood over it with a couple of nails. If a vise is available the hose can be held in it. The next step is to hold the coupling with a pair of pliers and heat it in a flame of some sort until it attains a dull red heat. Then the hot coupling is thrust into the end of the hose, where it will stick, and immediately the hose end now containing the coupling is soused in cold water to cool it. It will be found that by this process the rubber has, after a fashion, been vulcanized to the metal. Then after the usual wire or spring clamps have been applied on the outside of the hose around the coupling, the metal will be held in the rubber so that it will, under ordinary conditions, never give further trouble from coming out.—E. A. Brown.

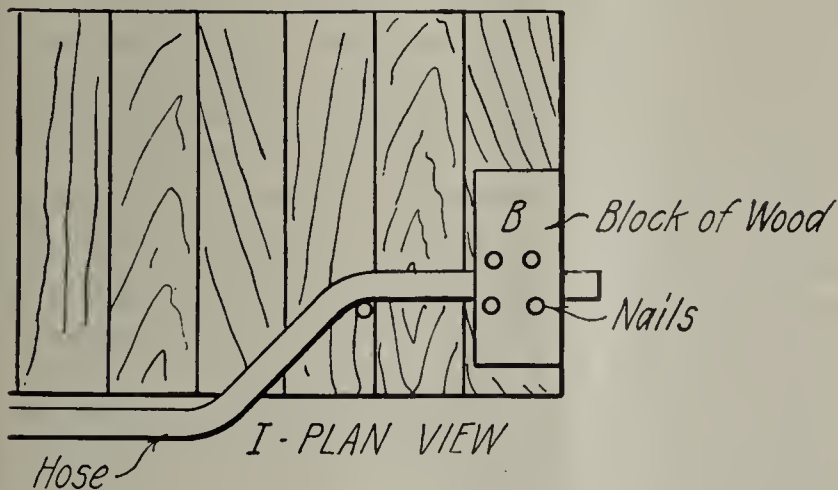
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Brick From Slate Waste

An interesting report comes from England which will be of interest to our readers. The Pantdreiniog Slate Quarry Co., Ltd., in addition to being producers of perfect slate of good quality, are manufacturers and producers of finely ground powder from twenty mesh up to two hundred mesh, and even finer. This material is for use in the manufacture of asphalt, brick, cement, abrasive soap, cleansers, glass, linoleum, tile, rubber goods, mantels, pottery, paints, slabs, insulators, and other manufactured articles where weather resisting, abrasive and good wearing qualities are required.

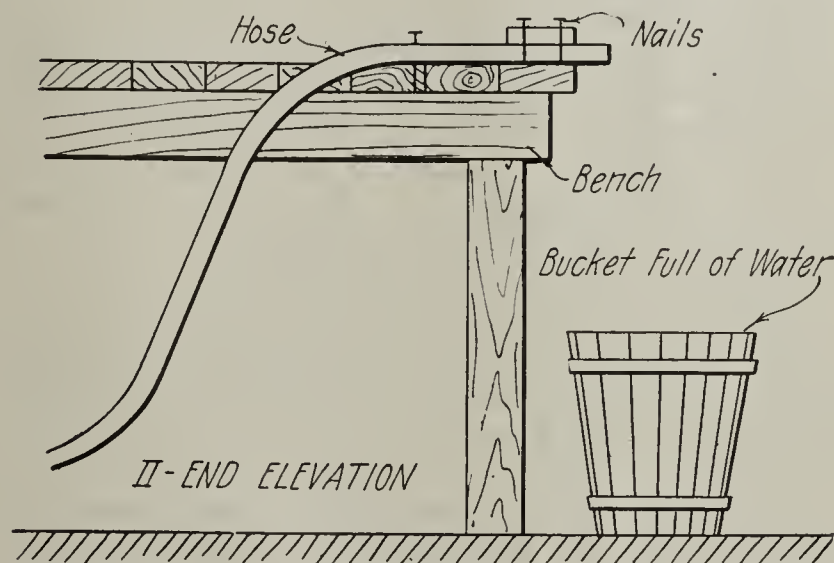
This powder is produced from slate waste of which millions of tons are lying in piles in nearly all North Wales quarries, covering many square miles of very valuable agricultural land.



Plan View of Arrangement for Attaching Hose Couplings.

The process of grinding, commencing with the pulverizing of large blocks of slate waste, results in the production of eight successive grades of powder, the last of which is ex-

tremely fine, in fact, almost vapor like. From the dust or powder produced by the operation of the crushing mills and their screening accessories, brick, unsurpassed in denseness,



End Elevation Showing How to Fasten Rubber Hose to Table.

strength and hardness, are being made. It is claimed that the crushing strength of these brick is 16,500 pounds per square inch.

It is also said that excellent common glass bottles, pottery and tile are also being made from this slate waste, the glassware being of a green or amber color. Tests made of the slate dust as a filler for low-grade rubber goods such as boot soles, and perambulator tires, have proven perfectly satisfactory.

It is recorded that perhaps the most important and lucrative field in which slate dust can be utilized will be in the manufacture of portland cement, and in this connection official experiments have been carried on by a recognized expert on portland cement, who it is said produced from the waste slate material a portland cement of higher grade than has yet been put on the market.

It is said that at the present time a machine is being developed capable of turning out 8,000 to 10,000 brick per day from this material.



Sulphur Content in Coal and Clinkering

It is a common idea among users of coal that sulphur is the cause of clinker trouble. Where the sulphur exists as pyrites, the iron present may act as a flux and cause a reduction in the fusing temperature of the ash, but, however, much the greater portion of the sulphur itself burns and leaves the furnace as a gas. There does not appear to be any relation between the sulphur content of the coal and the quantity of the clinker, or the fusing point of the ash, and one can hardly see how such can be the case.



It has been announced from London by the Associated Press that membership of the British trades unions has increased from 2,232,000 before the war to a present enrollment of 4,895,000.

IN *the* WAKE *of the* NEWS

Being a Brief Mention of a Host of Interesting Happenings in the Varied Fields of the Clayworking Industry

Personal

Roland Bushfield, of the Northwestern Clay Manufacturing Co., Aledo, Ill., spent several days in Chicago on a business trip recently.

Emmet Howard, head of the Columbus (Ohio) Brick Co., left soon after the first of the month on an inspection trip of a number of plants in the Hocking Valley.

Charles Frank, sales manager of the Nelsonville Brick Co., of Columbus, Ohio, went to Xenia, Ohio, September 29 to attend a letting of a street paving contract. Quite a few bids were submitted on the work.

J. J. Carney, for the last eight years identified with the Cuyahoga Builders Supply Co., Cleveland, Ohio, in various departments has been appointed manager of the face brick department of that company.

Word has been received at Trenton, N. J., of the death of Michael Manning, formerly a well known resident of this city engaged in pottery work, at Kokomo, Ind., on September 19. He is survived by his wife and four children.

Marion W. Blair, formerly superintendent of the Thornton (W. Va.) Fire Brick Co., has recently accepted a position with the Yingling-Martin Brick Co. as superintendent of their Johnsonburg, Pa. plant. Owing to the acute scarcity of houses, Mr. Blair will live at Ridgway, Pa.

Robert C. Mitchell, one of the best known brick men in the Middle West, and who has been more recently in general charge of brick work for the Cuyahoga Builders Supply Co., Cleveland, Ohio, has been appointed assistant to William A. Fay, general manager of the Cuyahoga.

W. T. Matthews, sales manager of the Claycraft Brick Co., of Columbus, Ohio, visited the plant at Groveport recently, where he made a thoro inspection. He reports a slight improvement in the car supply, which is helping the movement of brick and other clay products.

Adam John Weckler, 77 years old, a retired brick manufacturer of Chicago, died in San Diego, Cal., on September 22. He resided in Chicago from 1843 until a few years ago, when he moved to California. Mr. Weckler was president of the Weckler Brick Co. and the Weckler-Prussing Brick Co.

A. V. Bleininger, head of the Ceramic Department of the Bureau of Standards at Pittsburgh, Pa., and favorably known thruout the clay products industry, has been confined to his home. Blood poisoning was threatened owing to an infected foot, but his condition is such now that his speedy return to duty is assured.

Many friends in the ceramic industry will be surprised to learn of the marriage of Chester C. Treischel to Elizabeth L. Reedy, at Schenectady, N. Y. Mr. Treischel is a graduate from the ceramic engineering department of the University of Illinois, class of 1916, and at the present time is ceramic engineer at the General Electric Co.'s plant in the above mentioned city.

R. L. Queisser, head of the R. L. Queisser Co., Cleveland,

Ohio, has returned from a brief tour of eastern cities, where he went to spend a belated vacation. While away Mr. Queisser picked up a lot of building and material ideas, which he proposes to spring on the Cleveland trade as soon as he gets down to work.

J. R. Marker, secretary and commissioner of the Ohio Paving Brick Manufacturers' Association, left recently on a trip thru a number of cities and towns in Michigan to look over the paving situation. The state of Michigan is now looked after by the Ohio association, and there are prospects of a good deal of street and road work in that state.

Lieutenant Douglas G. Oviatt, formerly with the R. L. Queisser Co., Cleveland, Ohio, has returned from two years' service in France, to resume his connection with the sales department of the Queisser interests. Mr. Oviatt went abroad with the 37th division, but later was transferred to the G. H. L., where he has been doing special work until discharged.

P. McG. McBean, president of the Gladding-McBean Co., and Atholl McBean, secretary of the same company, spent a few days at the company's plant at Lincoln, Cal., the latter part of September. After remaining idle for nearly eight months the pottery plant at Lincoln belonging to the company has resumed grinding clay for the manufacture of clay products.

California

Claud Hancock of the Riverside (Cal.) Brick Works, announces that he has just completed burning 600,000 brick. He is looking for a great increase in the use of brick in the neighborhood of Riverside next year on account of the fact that the price of brick has increased so little in comparison to other building materials.

Fresno, the metropolis of the San Joaquin Valley, has recognized its prosperity better, perhaps, than any other community of California, and reports coming from that city indicate that 500 homes costing from \$3,000 up, are in course of construction or have been contracted for and only wait a greater supply of workmen for their erection. It is said that a fair proportion of the better homes are to be of brick. Several large business blocks and warehouses will also be erected in Fresno as soon as workmen are available.

One of the classes of buildings which have been constructed in greater quantity in California than any other, is the brick or concrete garages and repair shops. California, with its estimated population of 3,000,000, has licensed nearly 600,000 motor vehicles, and during the season it is estimated that nearly 10 per cent. of this number of machines visited the state from other sections. This has caused a rush to erect buildings of this kind. These buildings run in price from between \$3,000 and \$30,000 and in the aggregate reach a very large sum.

While the building records in the San Francisco section of the state show a constant increase it is generally conceded that the amount of construction for both homes and business purposes is no where near meeting the demands.

According to the estimate of the census bureau, Greater San Francisco, or in other words the Bay cities made up of San Francisco, Oakland, Berkeley and Alameda, will show a population of 950,000 in the decennial count to be made next year. That means an increase of 50 per cent. in the population of these cities during this ten-year period, for these four cities showed a population of 631,000 in 1910. There has been no such increase in percentage of either homes or places of business. Of course the establishment of several great shipyards will account for a portion of this increase and the buildings used in this industry would not be so extensive as in regular factories or business blocks taking care of the same number of people in other industries. However these workers have to have homes in which to live and this has been one of the problems which have been difficult to handle. For one reason it is questionable if these industries will continue indefinitely after present contracts for construction of Government ships come to an end. The workmen are restless and demand wages which cannot be paid in competition with eastern and European shipyards. The cost of the steel going into these vessels is high and this is another element which points to a much greater restricted output of the yards if not the discontinuance of several of them. With these elements of doubt it is not to be wondered that many hesitate who would otherwise build for present and prospective needs of the community. One optimistic view of this situation is that even if the shipbuilding business shrinks to minor importance and many of those now engaged in it leave for other fields of endeavor, still there has been a large increase in population in this section, and sufficient buildings of various kinds have not been provided to take care of them all.

Delaware

The Oberly brick yard, Thirty-sixth and Broome Streets, Wilmington, Del., operated by James B. Oberly, is running at a capacity of about 25,000 brick a day, and experiencing a good call for the production. In this connection, it is set forth that the suburban demand for common brick has been gaining in volume over the city call; the latter, however, is picking up and expected to be better in the early days to come. This organization is now operating three motor trucks, as well as three wagon teams for deliveries to different sections and local service.

The committee appointed by the mayor of Wilmington, Del., to devise plans for solving the present housing problem, referred to in the September 23 issue of *Brick and Clay Record*, is actively engaged in the preliminary phases of the task. It is proposed to build about 300 houses by means of a tentative fund of \$300,000 to be provided. Bankers, builders, building material dealers, architects and business men are interested in the movement, and it is expected that actual estimates of cost and other essential data will be secured at an early date, and active progress made on the project.

A good call for brick and other burned clay products is being experienced in the Wilmington, Del., district. Common brick, particularly, is operating under an active demand, with price holding well at about \$20 for good grade stock, delivered on the job. Hollow building tile is in popular call for different operations, with price range at \$50 to \$80 for the smaller sizes, and from \$100 upwards for larger shapes. Fire brick is selling for a trifle over \$60 per thousand, on the job. Face brick is keeping up with the trend of affairs and is sold for \$38 and \$40 per thousand upwards, depending on quality and color of the material. Local brick and mason material dealers are quite busy, and look forward to an active season for building

operations of all kinds, and with good demand for high grade building commodities.

Building construction work at Wilmington, Del., and vicinity is going forward at an encouraging pace. The labor situation has righted itself and there is every indication that the fall and winter building seasons will be active ones in this locality. Housing work heads the list for prominent call, and every effort is being made to supply the demand. Residence and apartment work is expanding in volume, and industrial operations are showing the same trend. The realty market, in entire, is very active, and a large number of properties is changing hands. Public work is not behind in the range of activities, and the City Council has recently passed an ordinance providing for a bond issue of \$2,890,000 for municipal improvements. Of this amount, about \$2,500,000 will be used for harbor and waterfront construction and betterments, \$300,000 for street paving, and \$90,000 for water improvements.

District of Columbia

The National Brick Co., Jno. G. Benton, general manager, 500 Bond Building, Washington, D. C., has purchased the Silicate Brick Co.'s plant at Terra Cotta, D. C., and will install new machinery valued at \$50,000. The daily capacity of the plant, which was 50,000 brick, will be increased to 60,000 per day.

Georgia

It is reported that George Mertens has acquired land at Berry, Ga., where he will erect a plant to manufacture 40,000 brick per day.

Illinois

A scheme for completion of the entire system of paved roads in St. Clair County, under the Illinois State Road Act within six years was submitted to the Board of Supervisors at its last meeting by D. O. Thomas, county superintendent of highways, and the board's committee on roads and bridges. In addition to the \$400,000 in bonds already issued and of which the greater part has been spent, it will be necessary to issue an additional \$540,000 to go on with the work. The scheme provides for paving certain roads already prepared, and grading and culvert construction on others, to be paved a year or two later when all fills have thoroly settled. It is estimated that in six years the paving of the entire system as previously adopted and approved by the State Highway Department will be completed.

Indiana

W. H. Fyffe Parry, the brick man of Gary, Ind., has recently received an order for 250,000 face brick for the National Spring & Wire Co.'s new building now in course of construction.

Kansas

Experts are making an examination of the shale in Arkansas City, Kans., with a view toward adding a brick plant to the industries of that city, according to Secretary Heffelfinger, of the Chamber of Commerce, should the shale prove suitable.

Kentucky

The Southern Brick & Tile Co., Louisville, Ky., is running full, and reports a very fair demand for brick, while dull periods are being used in manufacturing tile for fall and winter demand. The company is not operating the old Hoertz plant this year, as the tile demand has not been

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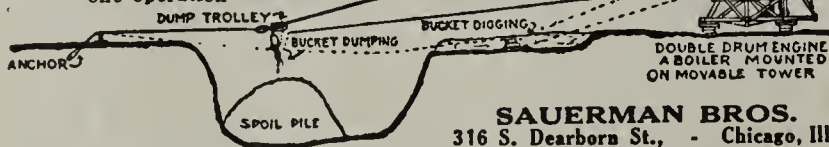
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sufficient to warrant it, and brick demand while good, has not been large enough to rush the main plant, which has been able to make more tile than usual.

Louisville brick and tile manufacturers are complaining over the rapid increase in cost of better grades of Eastern Kentucky coal, mine run having jumped a dollar or more on the ton during the past two months. Good grades of mine run were selling as low as \$1.90 a ton a few weeks ago, whereas they are quoted at \$3 and \$3.25 a ton now. This has been largely due to shortage of cars which caused low production and high prices. However, relief has been promised the coal mine operators in the car supply, and this will tend toward lower prices, as mines for several weeks were down or only operating two or three days a week.

There has been a good deal of improvement shown in the demand for fire brick during the past month according to J. H. Bell, sales manager of the Louisville (Ky.) Fire Brick Works, who reported September an excellent month. However, the steel strike has held up a number of large orders, as steel manufacturers, who are among the largest consumers, are down tight, and not even making repairs during the strike period. However, there is a good general demand coming from various classes of consumers, and these small orders have been totaling nicely. Both plants have been operating at capacity for the past month.

A. P. Hillenbrand, of the Progress Pressed Brick Co., Louisville, Ky., in discussing the situation said: "We are downright rushed at the present time, deliveries running 30,000 to 35,000 common, hard and face brick daily, which is more than our capacity. Most of this business is on small jobs, altho we have some large ones, including the new Adler organ works, and the Presbyterian Orphanage. We now have orders on our books for 150,000 face and 1,000,000 hard brick, and figure that we will produce about 4,000,000 brick this year. We plan to run right thru the holiday season if necessary in placing a full stock on hand for a spring demand that we feel is going to be good."

Business has shown considerable improvement in Louisville, Ky., during the past few weeks, there being a much better demand for brick, sewer pipe, hollow building tile, etc., in August than during July, while September was a much better month than had been expected. One of the greatest drawbacks at the present time is the slowness of deliveries from brick manufacturers to local houses jobbing brick and building supplies. Manufacturers in many instances report that they are sold up on production until after the first of the year and as a result are turning down all business offered, which is making it extremely hard on the jobber to make headway.

Brick manufacturers of Louisville report that they are very busy, and that they are selling and delivering more brick than they are producing at the present time on local jobs. Car shortage is interfering materially with handling shipments to other points, but some relief is in sight in the matter of open cars as a result of efforts of the coal operators in Washington, which resulted in orders being issued for the Louisville & Nashville lines to be given a better supply of open cars. For months empties have been routed to car pool territory resulting in shippers on the L. & N. lines having great trouble in securing cars. However, all classes of cars are scarce at this time.

Business has been very good with the P. Bannon Pipe Co., Louisville, Ky., Sales Manager A. P. MacDonald reporting a heavy demand for sewer pipe and hollow building tile, while brick have been moving well. Both plants are running

full, principally on orders on hand. New business is not so active, but a fair volume of small orders are being received. Mr. MacDonald said: "The architects and engineers have an unusually large amount of work in their offices, and while very little of it will break this fall, the spring outlook is very promising. We are making deliveries on hollow tile for the Atherton building annex, and the new plant of the Independent Ice & Cold Storage Co."

The Coral Ridge Clay Products Co., Louisville, Ky., reports a slightly better car supply, which is resulting in the plant operating on full capacity basis again. The company has some good brick orders, and several good orders for hollow tile, while farm drain tile is being made up on winter stock.

W. L. Cremers, manager of the brick department of the R. B. Tyler Co., Louisville, Ky., in discussing the situation said: "The building industry has taken a second breath, and things are much better than they were in mid-summer. The public has about decided that prices are going to stay with us for a while, and that rentals and property valuations are offsetting increases in materials for the present at any rate. August and September business was good, but deliveries are very slow, and we are having trouble in supplying demand on brick which we job. In the first place many manufacturers are oversold, and then there is the car shortage. Seventy-five per cent. of the manufacturers are asking dealers not to send in any more orders this year. A good many plants quit business during the war, and this has resulted in the remaining plants meeting with a very heavy demand, whereas most of them started the year with low stocks, being unable to determine which way the cat would jump, and not wishing to be caught with large stocks on a declining market. The result was that stocks on hand in the spring were abnormally light, and demand has taken care of production."

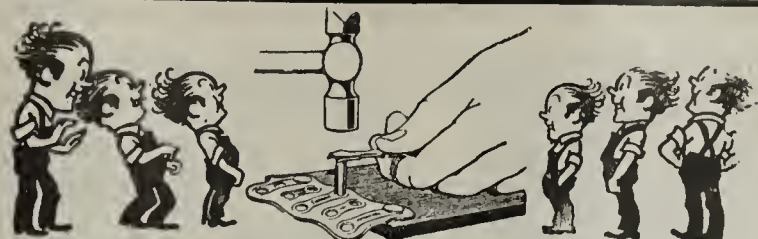
Maine

A kiln containing half a million brick was lighted at the plant of the Reed Nichols Co., in Bath, Me., on September 15 after having been delayed some time because of rainy weather. The burning of this kiln will mark the close of a very successful season for the company. There has been a good demand for brick in Maine during the summer months due in a large measure to the housing propositions undertaken by the Government at Bath and elsewhere. Many of the houses erected for shipworkers at Bath were built entirely of brick. The shortage of help and the high wages asked by laborers has been felt in Maine as in other states and has in a measure affected the output of the brick yards.

Maryland

Mayor Broening, Baltimore, Md., is planning for the early appointment of a local commission to revise the existing building code of the city. It is set forth that the present code has outlived its usefulness and does not meet current conditions satisfactorily. The mayor is desirous of working out a thoroly modern construction code that will provide regulations for buildings and materials of every character, and place operations in the city on a more substantial basis.

The plant of the Queen City Brick Co., Cumberland, Md., has been purchased by Maurice Clark and Thomas B. Kean, Cumberland, and J. E. McCusker, Frostburg, Md. The new owners are planning to place the plant in operation at an early date for the production of common brick, giving employment to about 30 men for initial



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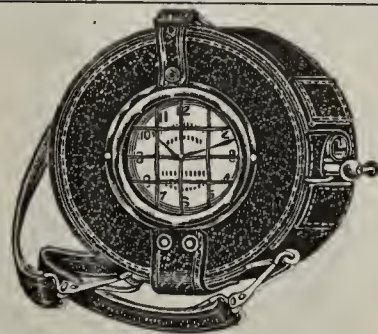
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BRODERICK & BASCOM ROPE CO.
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Manufacturers of

B. & B. WIRE ROPE
AND

Aerial Tramways
For Economical Haulage



work. The property, which is located near Market Street, vicinity of the former local yards of the Western Maryland Railway, will be remodeled and improved for greater efficiency in manufacture.

The Pen Mar Co., Baltimore, Md., reports business as being good at the present time, particularly outside of the city limits, and views the outlook with encouraging aspect. The call in the city proper is said to be a little light at the moment. This company handles Frederickburg brick; this material is said to be of higher grade quality than regular common brick, and is about 2-in. longer than the ordinary stock. Other high class mason materials are also handled, and shipments are being made to points a considerable distance from Baltimore.

The demand for common brick and other burned clay products continues strong at Baltimore, Md., and surrounding districts. The price for good, hard common stock holds at \$17, delivered on the job, and this figure shows no sign of change either way. Local brick production is keeping pace with the call, and the plants are experiencing busy days with a good volume of orders ahead. Hollow tile is selling well, with prices firm at from \$66 and \$67 upwards, according to size. Fire brick has slackened a little in call during the past fortnight, with quotations remaining around \$75 for No. 1 Standard. Face brick is operating under a good call, with quotations ranging from about \$27 for lesser grade material to about \$45 per thousand for selected varieties.

There is certainly no recession in building operations at Baltimore, Md., and vicinity, and work of this nature is proceeding at a fine status. Brick men and mason material dealers are optimistic as to the general outlook and it is expected that the fall season will show still greater strength as it proceeds. Industrial work continues to gain in volume, and a large number of important projects are now under way at Sparrows Point, Fairfield and other parts of the industrial section. Housing work, on the other hand, is certainly not lagging and a good number of permits is being issued by the building department for construction of this nature. A seven-story, brick apartment building is being planned by James H. Preston, Munsey Building, to be located at 820 North Charles Street, with estimated cost of \$200,000; Thomas Hampton, 12 Lexington Street, is at the head of a project to build about 400 residences of brick type at Arlington, at an estimated cost of \$1,000,000; Stanislaus Russell is architect; a one-story brick, motion picture theater to cost about \$70,000, will be erected by Pierce & Scheck, Knickerbocker Building, on Broadway; and a ten-story, brick automobile building, to cost about \$1,000,000, will be erected by Israel Silberstein, Equitable Building, on St. Paul Street.

Massachusetts

The demand for brick in Massachusetts, and more particularly in the immediate vicinity of Boston, is reported as improving almost daily as the close of the season approaches. Manufacturers and dealers report orders for 100,000 or 200,000 brick with more or less regularity, but these constitute about the largest contracts that have been placed in the vicinity for some time. The possibility of a general strike in Boston and its suburbs to aid the striking policemen had a somewhat depressing effect on all lines of business but that danger is now believed to have passed, and the building boom

which has been gaining impetus week by week is expected to grow still faster than before.

State highway officials have made their annual tour of Massachusetts during the past fortnight to lay out plans for 1920 road work. During the war much of this work was of necessity abandoned and it is thought that a large amount will have to be done next year. Discussing the highway commission's plans, James W. Synan, the chairman, said: "The commission is planning for a very busy year in 1920, and if labor is available we expect to make it the banner road building year in the history of the Commonwealth. Nothing will be allowed to stand in the way of the carrying out of the program except a possible labor shortage."

Michigan

C. C. Stadler, of Chicago, an experienced brick and tile manufacturer, is reported to have purchased the Schaf brickyard which is located north of Two Rivers, Mich. Mr. Stadler will add new machinery to the equipment of the yard and will manufacture a high grade of brick, tile and other clay products. The yard was for many years owned and operated by the late Peter Schaf.

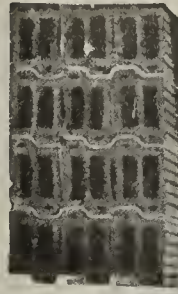
Missouri

The Farber (Mo.) Clay & Mining Co. is making great headway on its new plant. Gas producers are at the present time being installed to supply gas for burning fire brick in the continuous car tunnel kiln.

Records of the shipments of clay products from the Laclede-Christy Clay Products Co.'s plant in St. Louis, show the enormous quantity of 517 cars for the month of September. This plant has been extremely busy and is attempting to increase its production and at the same time decrease its cost of production. A new clay conveyor system has been installed and at the present time they have under consideration the equipping of the periodic kilns to burn producer gas.

The Laclede-Christy Clay Products Co., St. Louis, Mo., has started grading and preparing four city blocks of ground north of what is known as Southampton and will install streets, sewers, sidewalks, lay out the lots in forty and fifty foot frontages and make it a subdivision where a man can afford to own a modest home and be surrounded by agreeable conditions. The Board of Education has agreed to the details of erecting a school costing \$225,000 on a site at the extreme western end of the subdivision. A large lot of ground has been purchased by the Catholic diocese and a church will be erected. Henry Wright, a landscape artist, is in charge of the development.

There has been some comment in brick manufacturing circles as to the use of old brick which is said to be about to become a fad in the erection of dwellings. One contractor said that this practice is being advocated by some architects in the erection of residences for fashionable clients who wish to avoid the appearance of newness on the exterior. The fad is not confined to brick alone, he explained, but applies to woodwork, stone and marble. It is not a question of economy. If the fad should become general to any extent the home builder would select the building material on sight, probably before the building in which it was originally used had been razed, and most likely pay a higher price than he would have to pay for new brick. There is no doubt that manufacturers would suffer from the practice.



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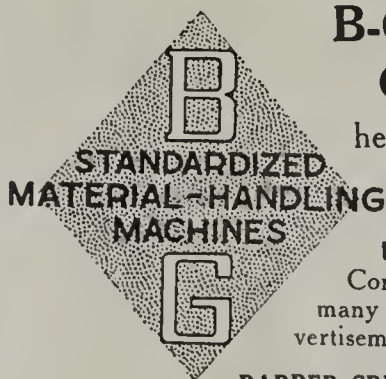


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Recently our Buffalo representative sent us a report, which on second thought we believe will interest every clay manufacturer. Having called on an agent for sprocket chains made by a competing firm, our man reports that "he acknowledges, although a _____ agent, that for some of his work there is nothing to compare with UNION CHAIN under 'grilling conditions.'" All of which shows that even our competitors concede the superiority of UNION CHAIN.

If there are "grilling conditions" in your plant, we would welcome the opportunity to prove the many advantages of using UNION STEEL CHAINS.

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New Jersey

To show the value placed on brick for permanent construction, it is interesting to note that E. I. du Pont de Nemours & Co., with powder works at Wayne, N. J., have selected brick as the material to be used for the reconstruction of two buildings at the works used for powder production. Operations will be resumed in the structures at once.

Brick production holds at a good pace in the Hackensack, N. J., district. Now that the season is waning, the different plants are devoting utmost efforts to round out the season run with desired totals. The demand for the material continues strong, and stocks are rapidly absorbed. At the same time, a reserve is being laid by for utility during the winter season. The price at the yard still holds at \$16 per thousand. Local prices on the job are around \$17.50 a thousand, while outside the city limits, in neighboring localities, the figure is \$18 and upwards. The Hackensack Brick Co. and I. E. Gardner, two of the enterprising brick interests in this section, are holding well in the matter of production and sales.

Brick production is keeping up well in the Trenton, N. J., section. The different plants in this district which operate on a seasonal basis, are making the most of the good fall days to speed up the output to the desired point, for with the call for material thruout this section, there has not been an opportunity for some of the plants to stock up to the desired points. The all-year plants, such as the Independent Brick Co., with works at Bordentown, N. J., are maintaining production at a good status, and experiencing the usual good call for material. The present yard price at Trenton is in the neighborhood of \$14 and \$14.50, with lower quotations for salmon varieties. But for the matter of labor, the season's operations have been quite satisfactory in this neighborhood.

A new building ordinance is being framed at Newark, N. J., dividing the city into different construction zones. Of these zones there will be four, known as A, B, C and D, each covering certain boundaries. The first will include the residential district; the second, the business section; the third, light industrial, and the fourth, heavy industrial. Under the terms of the new ordinance, no buildings higher than 150 feet will be permitted in the city, church spires, towers and chimneys excepted. Nor shall any building be erected to a greater height than twice the width of the street on which it fronts. These restrictions are intended to spread the city's buildings, and prevent growth of congested districts. Different materials are specified for fire-proof and other service, including brick, hollow tile, etc.

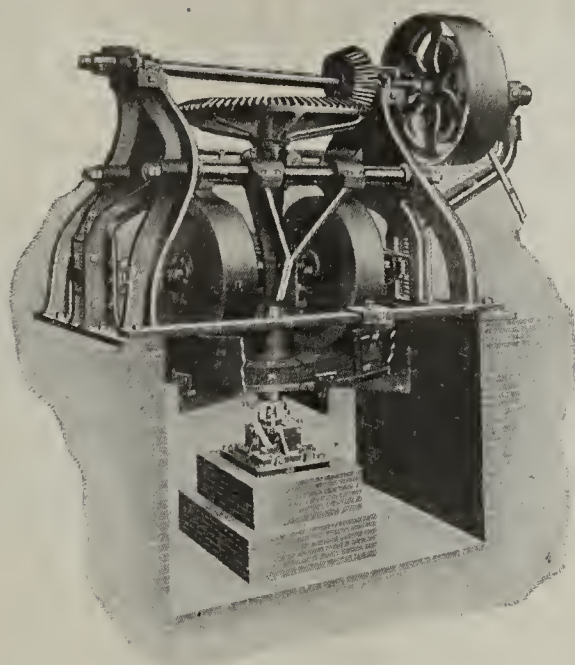
Building conditions maintain at good status in the Trenton, N. J., district, and the developments in the line of new projects and realty operations are encouraging. A slack in "top notch" activities has been brought about by a strike of local bricklayers, who are asking an increase of 20 cents an hour in the present wage rate; the plasterers have also made a like demand. The men have been receiving 80 cents an hour. Members of the Builders' and Masons' Association hold that the workmen are violating an agreement which is in effect until January 21, 1920, by refusing to work at the present time unless the increase is granted, and it does not seem likely that the demands will be met. The "Trenton House," the leading hotel in the city, will be remodeled and improved at a cost of about \$25,000; there is considerable local industrial expansion

now going on, and a number of plants are building additions.

Tomkins Brothers, Newark, N. J., dealers in mason materials, and engaging in wholesale and export operations, report trade as being very good at the present time, with an active demand for brick and general burned clay products. The prices for different materials of this character, it is set forth, hold strong, and particularly is this true in the matter of sewer pipe; deliveries of this latter commodity are said to be considerably behind schedule, owing to lack of available freight cars. Manufacturers who require from 12 to 15 cars a day, are receiving only 4 or 5 cars. The demand for sewer pipe is good at the present time. It is believed that altho the trend of brick prices carries an undercurrent of advancing, the common brick will hold at present levels, as to increase the cost to the user at the time would likely result in less call for material. Face brick in certain varieties has a tendency of going a little higher in quotations.

Every week of the month of September at Newark, N. J., brought forth increasing totals for construction work, and the aggregate is piling up so fast that it is a hard matter to make entirely accurate comparisons from week to week. The estimated valuations for the month are more than four times those for the corresponding period of a year ago. Up to September 26, the estimated cost of work covered by plans filed at the building department totaled \$1,652,985, as against \$467,215 in September, 1918, a gain of \$1,185,770, with still a few days to go before figuring the grand total for the month. The total number of permits in this time was 252, as compared with 126 for the previous September, exactly twice the amount. New dwelling work is playing a prominent part in the construction totals—four permits alone cover the erection of such number of apartment houses to house a total of 88 families. As an idea of the constant gain, the last week in the month aggregated \$783,117 or twice the amount of the previous week, which totaled \$365,381. The labor situation is growing decidedly better in this locality, and the majority of the men in the different building trades are "on the job." No men in these lines need want for work, that is certain, for there is a big call for skilled help and common labor of all kinds.

Brick continues to more than hold its own as the popular building material for permanent structures thruout New Jersey. Prices hold firm, with no indication of change either way at the immediate moment. Production is keeping pace with call, and stocks are well maintained. Good sized quantities of Hudson River brick are finding their way to New Jersey points, particularly at Newark and vicinity; Hackensack brick is being used freely in different parts of Northern New Jersey, including Paterson, Passaic and vicinity; the Raritan River production is furnishing practically all requirements at New Brunswick and surrounding territory, and Trenton manufacture is in the same position in the various Mercer County sections. At Newark, good hard common brick is selling for \$20 per thousand, delivered on the job; at Paterson, it is quoted at \$19 from the yards, and at \$18 when delivered direct from the kiln; at Trenton the price range is in the neighborhood of \$15 and \$16 per thousand, while at New Brunswick, Plainfield, Morristown and other interior points, the price, delivered on the job, is from \$20 to \$22. Hollow building tile, partition tile, sewer pipe and other burned clay products are operating under an active call, with prices showing no evidence of any decline. Hollow tile is selling from



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Crushing, Grinding, Pulverizing, Empounding, Tempering and Mixing, Elevating and Conveying All Kinds of Materials, STEAM PRESSES FOR MAKING

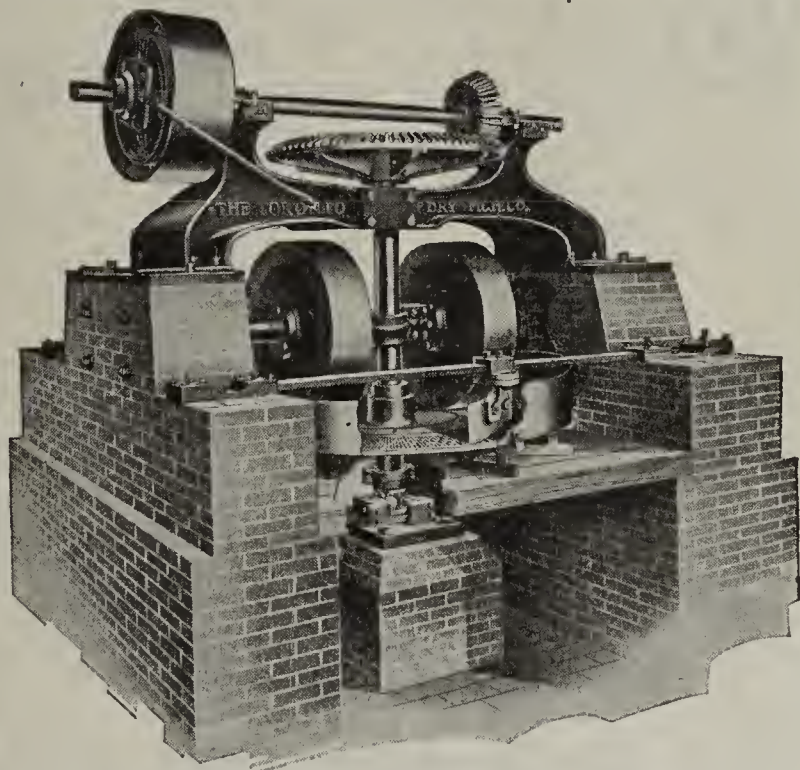
Sewer Pipe, Drain Tile, Hollow Blocks, etc.
All of the highest class designing and construction are manufactured by

THE STEVENSON COMPANY

General Offices and Works: WELLSVILLE, O.

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THE MEANS GRINDING PANS



For Grinding Wet, Semi-Dry and Dry materials. Made in sizes adopted by the best judges. We are in position to solve your grinding problems.

SINGLE, DUPLEX OR BATTERY INSTALLATIONS OF
8, 9 AND 10 FOOT PANS.

Write for Descriptive matter and prices on Pans Also Bulletins on Sewer Pipe and Tile Presses, Elevating and Conveying Machinery, Trucks, Barrows and other equipment for the clay products manufacturer.

THE TORONTO FOUNDRY & MACHINE CO.

Toronto, Ohio

\$LIPPING BELT\$ COST DOLLAR\$

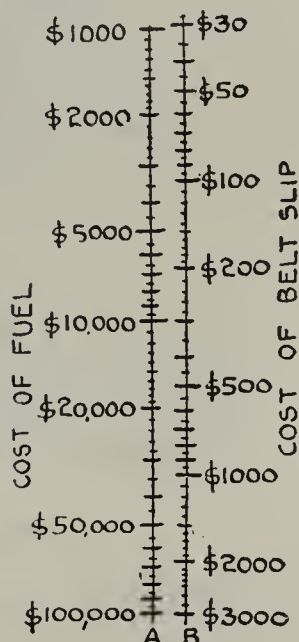
Cling-Surface, at a cost of a few cents per year per belt, saves much money

Column B, on this chart, shows how much money CLING-SURFACE will save.

The cost of belt slip is too important a matter to ignore, especially in view of the fact that it can be completely eliminated by CLING-SURFACE treatment.

For over twenty years, CLING-SURFACE has been making good on every type of drive—on every variety of belting material under the widest variety of working conditions, from the damp, sloppy paper mill to the baking atmosphere of the power plant.

CLING-SURFACE adds "life" to the belt by permanently lubricating every little fibre. It protects the belt from moisture and wear, adding weight and vigor to the entire fabric. CLING-SURFACE will make your leather or cotton belts or rope waterproof, pliable and wear resisting. It increases the efficiency of even rubber or balata belting. A CLING-SURFACE treated belt will run slack or easy under full load without slipping. You cannot afford to be without CLING-SURFACE.



Cling-Surface Company

1029 Niagara Street

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New York

U. S. A.

"Proctor" DRYERS for Clay Products

The Proctor Dryer insures an absolutely uniform dry product.

It permits the simultaneous drying of more than one kind of ware without injury to the product, or without decreasing the efficiency of the dryer.

It is semi-automatic in operation.

It enlarges the capacity of the entire plant by increasing the output of the drying department.

The performance of the Proctor Dryer is independent of atmospheric conditions.

The Proctor Dryer requires a minimum of floor space.

THE PHILADELPHIA TEXTILE MACHINERY COMPANY

Drying Machine Spécialists

Seventh Street and Tabor Road, Philadelphia, Pa.

CHICAGO, ILL.,
Hearst Building
PROVIDENCE, R. I.
Howard Building

CHARLOTTE, N. C.
Realty Building
HAMILTON, ONT., CAN.
W. J. Westaway, Sun Life Bldg.

65

\$100 to \$210 a thousand, depending upon size, in the different cities. Fire brick, No. 1 Standard, ranges in price from \$63 to \$70 and slightly upwards in the different cities.

The call for new homes and housing accommodations certainly is being answered in New Jersey. The cities and suburban towns are "going to it" with a vim and a number of important projects covering a large number of houses are now under way. Work of this character is going forward in all parts of the state—at Newark, and such neighboring districts as Montclair, Bloomfield, the Oranges, Summit, Morristown and the rural communities; at Trenton and Camden, and vicinity; in South Jersey, including the different shore resorts. Sunday work is no novelty hereabouts these days, and even the double time is paid to men in the various building trades, it doesn't seem to make any difference; October is the big renting and selling season, and equally large for immediate home occupancy—thus, every endeavor is being concentrated to help the movement by having quarters available. Industrial work is not very far behind, altho enterprises of this nature are not being pushed so strenuously nor with such exceptional rapidity; public work is coming along in excellent fashion and a good volume of work in this line is now current. As to be expected, this building activity is making things "hum" for the brick man and mason material dealer, and there are but few in these branches of trade who do not report business as being very good, and constantly growing better. The outlook is highly encouraging—it looks like a fall and winter building season to go forward with unabated zeal; one that is going to make big demands on the brick and burned clay products industry, but these lines seem to be ready for the call.

The Sayre & Fisher Co., Perth Amboy, N. J., reports business as being good at the present time, with a healthy demand for common brick. When working at capacity, the company manufactures about 1,000,000 brick a day at the local works and has every facility for handling this run from clay pits to finished product, with the employment of about 1,800 men. At the present time the company is operating on a piece-work basis, the employees engaging from about 7 a. m. until noon. It is held that this method of operation is desirable at the present time and proving very satisfactory at the plant. The company has an ideal plant location in this section, fronting on the Raritan River, which with siding from the Pennsylvania Railroad gives both rail and water facilities for shipments. The clay properties from which the raw material is secured extend for a distance of about seven miles from the plant; the material is very high grade and goes to form an exceptionally fine product. The company operates about seven steam shovels for clayworking, and hauls the material to the plant by means of a car and rail system. At the present time the clay is being secured at a distance of about one-half mile from the main plant; it is said that about 30 years ago the clay banks were about 60 feet high in the direct vicinity and on the site of the present works, and this gives a general idea of the amount of material which has been mined for Sayre & Fisher brick. The plant is thoroly modern and up-to-date in every respect. Mechanical means are employed for different operations and a fine equipment of machinery has been installed. A rail conveyor system of Lakewood Engineering Co. type is in service. With the location of the plant, as noted, utmost efficiency is secured in operation; the raw material comes in from one side of the property, passes thru the plant and

the different manufacturing departments in regular sequence, and is handled at the other side of the works as a finished product. From this point the production is loaded on cars or boats, as may be desired, for the different bulk shipments. The present price quotations are \$18 per thousand aboard car, and \$19 delivered on the job to nearby localities.

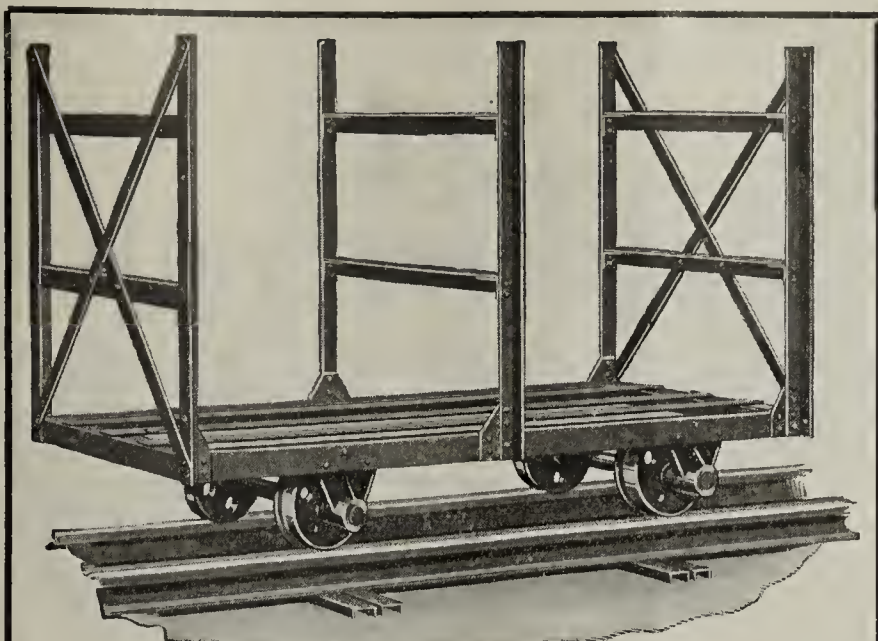
New York

The Hay-Walker Brick Co., New York, is experiencing its usual good business. The company is being called upon for a large number of estimates for new projects, and the outlook is held to be very favorable. A good volume of work is under way, and material is being furnished to a number of important buildings now being constructed in different parts of the city, as well as out-of-town. The company handles a wide variety of face brick, representing a number of Eastern Pennsylvania manufacturers, as well as producers at other points in New York territory.

The ceramic industry comes out in particular prominence at the annual Electrical Exposition at Grand Central Palace, New York, September 24-October 4, inclusive. The wide extent of the utility of modern day electrical porcelain ware is demonstrated in a forcible manner, and numerous displays of this material were in evidence—moreover, there were countless instances of the extreme usefulness and need for high-grade electrical porcelain for parts and features of larger electrical equipment. Among the numerous exhibitors were the General Electric Co. and the Westinghouse Electric & Manufacturing Co., and as to be expected, the different booths of these concerns were highly attractive and interesting. The week and one-half of the exposition was a great success, and the building was crowded nightly.

The brick manufacturing plants in the Hudson River district are making the most of the waning season, and production is being pushed at a good rate of speed. There are many green brick to be seen in this locality, giving assurance that burning operations will be continued for some time to come. Good sized shipments are being made from the different yards to the New York market, and with the active call for material it is likely that deliveries will continue at a fine pace during the remaining months of the year, or until the river is closed. It has been brought out recently that the present price of Hudson River common brick at the yards is considerably lower than current quotations for this commodity from any other districts. The price at the New York docks, \$15, has been stabilized to a large extent, and it is believed that this figure will maintain for some time to come. The producers, however, seem to feel that the price should be higher, but there is no actual move to make this sentiment a reality.

The Borough of Brooklyn is drawing heavily on the brick market at New York for Hudson River stocks. A large number of barge loads has found its way to this section during the past few weeks, keeping step with the call evidenced in months past, and all have been rapidly absorbed for current and immediate future operations. The mason material dealers in this vicinity have been quite busy up to the time of the strike, which has naturally brought about a lessened call. As an idea of what is going on in this locality, the following are a few typical projects: four-story apartment building on Jamaica Avenue, to be constructed by the Schadoff Construction Co., 1861 Pitkin



DRYER CARS built for Your plant

Correct designing means correct construction.

We will be pleased to have our engineer's go into the matter of cars with you personally, giving you the advantage of large experience. Write us your requirements.

H. D. Conkey & Company
MENDOTA, ILL.

You can get a higher price for your brick if you guarantee it will be

Scum-Proof

And you can do this with perfect safety by using

R. H. Precipitated Carbonate of Barytes

It neutralizes the salt in your clay so that it cannot appear on the surface of the brick after it gets wet.

But don't accept a substitute—insist on R. H.—the dependable brand.

Write for circular and prices.

The Roessler & Hasslacher Chemical Company

100 William St.

New York

Chicago, Ill.
Cincinnati, O.
Cleveland, O.

St. Louis, Mo.
Kansas City, Mo.
San Francisco, Cal.

Philadelphia, Pa.
Boston, Mass.
New Orleans, La.

We carry a complete line of high grade chemicals for the clay industry



Light steel rails

We saved the day for the Clay and Coal Operators in War Times by furnishing BUCKEYE MINE RAILS, whenever and wherever needed, and while many other Steel Mills were running exclusively on other material, you could not have operated without us at that time.

Now, in Times of Peace, we ask that you do not forget us, as we can, and will render the same unexcelled service, and furnish the same high quality of material. "Buckeye means best", and BUCKEYE LIGHT STEEL RAILS are better still. All sections from 12 lb. to 40 lb. inclusive always in stock for quick shipment.

Let us have your inquiries, and we will take the chance of developing them into orders on our books.

THE BUCKEYE ROLLING MILL COMPANY
STEUBENVILLE, OHIO

DOES YOUR PROFIT GO UP IN SMOKE?

Canton Rocking and Dumping Grates in your plant mean a large saving in fuel, or a greatly increased production with the same amount of fuel.

By improving combustion, they make a coal saving of at least 10% in comparison with stationary grates. Peak loads can be maintained easily.

If you are interested in cutting down fuel cost and improving combustion, write for Bulletin B, Form 14.

Canton Grate Co.,
1706 Woodland Ave., N. W.
CANTON OHIO

**CANTON GRATES SAVE FUEL
FOR BOILERS FOR KILNS**

Avenue, brick, to cost \$150,000; four-story brick apartment house at Benson and Twentieth Avenues, to be erected by the Eighty-second Street Construction Co., to cost \$125,000; nine brick residences and stores, each two-story, to be built by the Brooklyn Land Co., 4718 Sixth Avenue, at Kings Highway and Coney Island Avenue, to cost \$94,000; twelve, two-story brick residences to be erected on Hopkinson Avenue, near Livonia Avenue, by the Walden Realty Corporation, 167 Riverdale Avenue, at a cost of \$120,000, and seventy-five residences, each to cost about \$9,000, to be built on Parsons Avenue, Flushing, by the Operators' Association, Inc., 235 Russell Street.

The New York brick market continues active. A good number of cargoes is being received from the Hudson River yards and rapid disposition made to nearby points. The volume in shipments has been running well over 20 cargoes a week. The price shows no change, remaining at \$15 per thousand for good hard common, in wholesale lots, alongside dock. The local dealers are charging in the neighborhood of \$18 per thousand delivered on the job. There is not much "off grade" material in the market at the present time, and what is to be secured is usually on special quotations. Good second-hand brick is obtaining at about \$15 per load of 1,500, delivered on the job. Face brick prices remain the same, ranging from \$37 to \$45 and \$48 per thousand for different varieties, delivered on the job. Reds, rough and smooth, are selling for \$37, while rough and smooth grays are quoted from \$45 to \$48. Fire brick is in fair demand, with present price quotations for good grade material around \$60, delivered on the job. Hollow tile and other burned clay products are operating under good call, with prices holding firm at present levels.

The building situation shows but slight change at New York during the past fortnight. The bricklayers and other workers in the building trades are still out on strike, but the general aspects are better, and it seems likely that a settlement will be arranged between the employers and the men at a reasonably early date. As to be expected, with labor difficulties to the fore, new construction work has been hampered and current operations considerably impeded. At the same time, projected work is going ahead, at least to the point of the preparation of plans and specifications by architects and engineers, and the asking for price quotations from brick men and dealers. The outlook for a good winter building season is very bright, particularly if open weather is experienced, making active construction work feasible. The call for housing structures continues, and every effort is being made to supply the demand to the greatest possible extent. The erection of dwellings, residences and apartments has been of particular prominence in the Brooklyn and suburban sections of the city, and the call for building materials of all kinds has been decidedly active in these quarters. Houses of all kinds are under construction, representing high-priced as well as modest homes, and certainly no difficulty is experienced in renting or making sales. The realty business as a whole has had a flourishing fall season.

Ohio

Manufacturers of paving brick in Ohio territory are now devoting their attention to cleaning up their orders before the cold weather sets in. Because of the car shortage that is proving a difficult task, as only about 50 per cent. car supply is available.

The Findlay (Ohio) Red Brick Products Co. has been chartered with a capital of \$75,000, to manufacture brick

and other clay products. The incorporators are: Walter C. Kirkbride, Justice Wilson, Milton C. Boesel, Herman R. Miller and I. J. Flory.

S. O. McFall, of Akron, and Scott Myers, Uhrichsville, Ohio, are reported to have purchased controlling interest in the Uhrichsville clay plant, located just west of New Philadelphia, Ohio. Mr. McFall has been with the Robinson Clay Products Co. for nineteen years and Mr. Myers with the same firm for sixteen years.

Robert L. Hare, formerly of Harpster, Ohio, has taken over the drain tile plant of E. G. Blaser, at Upper Sandusky, Ohio, giving it the name of the Wyandot Clay Products Co. He expects to completely overhaul and modernize the plant and will manufacture drain tile, fireproofing, brick and other clay products.

At a recent meeting of the stockholders of the Monroeville (Ohio) Clay Products Co., plans were completed for an increase of capitalization to \$250,000. A plant for the production of drain tile will be erected at once, the company expecting to have it in operation by the first of the year.

Another letting of road improvement contracts is scheduled by the Ohio Highway Commission, October 10. This includes several brick paving jobs, which are now being figured by contractors and manufacturers. It is believed that the Ohio Highway Commission will have quite a few lettings during the fall and winter for work to be started in the spring.

Contracts for grading, excavation and railroad switch work in connection with the construction of the plant of the Superior Brick Co., Cleveland, Ohio, were awarded recently, according to Robert C. Mitchell, one of the directors. Actual construction will start early in October, according to Mr. Mitchell. The contract has been awarded to the R. E. Carey Co., of Cleveland.

The labor situation among the brick plants of the Hocking Valley, and, in fact, all Ohio plants, is still rather unsettled. There is a shortage of labor at all of the face brick concerns, and paving brick manufacturers report the same condition of affairs. Labor generally is very uneasy and while there has not been any strikes so far, still the men are far from being settled and satisfied. The result of this condition is an output restricted to from 50 to 60 per cent. of capacity at practically all of the plants.

Increase in the use of Old English sand mold pebble surface brick is developing in the Middle West, following a lead taken in the East by certain architects, according to information received during the last fortnight by officials of the Hydraulic-Press Brick Co., Cleveland, Ohio. This material seems to be taking the place of the matt surface brick. The claim is made by Cleveland architects that a more distinctive effect is produced thru the use of the pebble surface material, especially where used for high class residence construction.

Quite a few large building projects are going forward in the Buckeye capital. Among the latest projects are a large six-story building to be the home of the Ohio State Journal, a morning newspaper, on East Broad Street; two large warehouses for the National Ice & Storage Co., one at Naghten and Fifth streets, and the other at Grant and Eleventh avenue; three large salesrooms and service stations for an automobile company, all located on East Broad street; two wholesale grocery warehouses, located

The ERIE is very speedy, because of its simple control. Only 3 levers.



"You couldn't make the Erie any better"



Serves either as steam shovel or as locomotive crane, with clamshell bucket.

"Our ERIE is doing well against all kinds of digging, hard and soft. I have had lots of steam-shovel experience, and I do not see how you could make the ERIE any better!"—R. T. Kyle, Supt., Huntington Clay Products Co., Barboursville, W. Va.

That's just what you hear from every man who has had plenty of steam-shovel experience. The ERIE is built with extra strength. You can **DEPEND** on the ERIE.

We would like to send you a Bulletin showing just what the ERIE Shovel can do. Write for Bulletin B.

BALL ENGINE CO., Erie, Pa.
Builders of ERIE Shovels and Cranes; BALL Engines.

ERIE

Revolving Shovels

BALL
Engine Co.
Erie, Pa.

Are you looking

for some way to relieve you of your sales worries? If so, advertise your ware—Building Brick, Building and Drain Tile, Sewer Pipe, Fire Brick, Terra Cotta, etc.—in

BUILDING SUPPLY NEWS

Advertising rates and sample copies cheerfully sent on request. Write today.

The only Dealer paper in the Building Field.

Endorsed by National and State Associations of Dealers

Building Supply News
610 Federal Street Chicago

BUILDING SUPPLY NEWS issues a current price list of your commodities in 73 cities thruout the U. S.

There is Only One Jenkins Valve

—it bears the Jenkins
"Diamond Mark."



There are Jenkins type and so-called Jenkins Valves that are often sold for Genuine Jenkins Valves.

The only valves that can be truthfully called and lawfully sold as Jenkins valves are made and have been made for over 50 years by Jenkins Bros. They are distinguished from imitations by the Jenkins "Diamond Mark," which is cast on the body of every valve.

For your protection, demand this mark—look for it.

Jenkins Valves are made of brass, iron and steel in types and sizes to meet all requirements—they are sold by supply houses everywhere.

JENKINS BROS.

New York Philadelphia Chicago Boston Montreal London

Jenkins Valves

2069-J

Rollin's Barium Carbonate

"We find that the use of Barium not only entirely eliminates the scum caused by sulphates, but deeper and richer colors result than would be expected." So writes a clay products company in Kentucky.

It is obvious to any clay products manufacturer that Barium Carbonate added to the pug mill or to the dry pan will produce brick and tile that command a higher price. It will build up more business than an inferior product which is "off color" and marred by white streaks.

Barium Carbonate makes the salt glaze stick to sewer pipe.

We can show you how the appearance of your ware can be improved, and can give you names of clay concerns who are profiting today by the use of Barium.

Write Us NOW

The Rollin Chemical Co.

(Inc.)

Charleston, W. Va.

in the wholesale district; several large apartment houses and a family hotel at Washington and Broad streets.

Building operations in Columbus, Ohio, are still active, altho the let-up incidental to the approach of fall is evident. Quite a few dwellings and apartments are still being started and architects are busy on plans and specifications for others. The situation as regards homes is still bad and there is a scarcity which will require at least a year to fill. The Columbus building department shows that about 15 new dwellings are started each week in the city limits, and it is estimated that fully that many more are started in the suburbs which are not under the jurisdiction of the department.

The Deegan Brick & Tile Co. has recently incorporated at Coal Grove, Ohio, with a capital of \$50,000. O. J. Deegan, city attorney of Huntington, W. Va. has been made president; J. G. Deegan, vice-president; D. M. Williams, secretary; A. L. Vass, treasurer, and J. F. Deegan, general superintendent. Their plant, which was formerly owned by the Petersburg Brick & Tile Co., has been remodeled and is now in a splendid working condition, with a capacity of from 20,000 to 24,000 per day. The company feels that they are in position to compete with other fire brick plants as they have their own quarries of No. 1 and 2 clay, shale and ganister. They also manufacture paving brick, blast, furnace or stove brick and tile.

Report comes to hand that City Manager Barlow, Dayton, Ohio, will ask the city commission to approve the purchase of brick necessary for the repaving of Forest avenue from Lehman street to Neal avenue. This street was paved in 1914 with block but it was found that the car traffic loosened the block and allowed water to undermine the foundation. Brick will be used in the new paving, the railroad company dividing the cost of the work. It is estimated that the improvement will cost about \$12,000. This item will prove of unusual interest because when this particular project was fostered by former City Manager Waite, who made an address before a meeting of the National Paving Brick Manufacturers' Association at the Congress Hotel, Chicago, a year or so previous, he indicated his absolute faith in brick pavements, but seemingly, later on changed to wood block. However, upon criticism made by the Manufacturers Equipment Co. he denied that he ever favored brick pavement. As a result, wood block was installed and the street today is a fright, despite the fact that the pavement was laid but a few years ago. It is interesting to know that paving brick is to replace the wood block.

Pennsylvania

Conditions are rapidly shaping up for a serious shortage of brick in the Pittsburgh, Pa., district. The brickyard labor is getting more scarce week by week, and the car shortage is becoming an acute factor in the situation.

The Harbison-Walker Refractories Co., Pittsburgh, Pa., has acquired about 1,000 acres of property on the west side of Cacapon Mountain, in Morgan County, W. Va., comprising extensive ganister rock deposits. The company will use the site for the production of material to be used in fire brick and high refractory manufacture.

The Allentown Tile Marble Co., Allentown, Pa., successor to the Allentown Tile Mosaic Works, is operating its plant for the production of high grade tile and other ceramic specialties, including mosaics, terrazzo, art marble, etc. The company manufactures a high grade line of

distinctive specialties, which find a ready sale. Andrew Rosetto heads the organization.

The Sidley Silica Sand Co., Philadelphia, is now operating its plant at Sidley Station, Chester County, Pa., for the production of high grade silica sand, designed for use in fire brick, abrasive wheel and other ceramic manufacture, as well as for the iron and steel industry. The company's properties embrace about 23 acres of fine silica rock, with chemical analysis showing that the material is running about 98 per cent. pure silica.

While the freight car shortage in the Eastern Pennsylvania districts is gradually being relieved with more available cars, the situation, as it stands, is not the most encouraging, and many brick producers, as well as manufacturers of other building materials of clay product character, are evidencing a little worry thru the hindrance in unloading the kilns, and allowing production to proceed on the desired plane. Plant congestion in the matter of shipments throws the entire workings out of tune, and leads to financial losses.

The Kane Brick & Tile Co. has been organized at Punxsatowney, Pa., for the manufacture of brick and other clay products. The principal stockholders are J. D. Ramsey, W. G. Bauer, D. J. Driscoll, John and Henry Vallmer, of St. Marys, Pa.; F. S. O'Donnell, of Johnsonburg; J. C. Miller and Edwin R. Treharne, of Ridgway; Fred Hasselback, of Fall Creek; W. S. Steele, of Brockwayville, and W. R. Meredith, of Punxsatowney. The newly organized company has taken over the plant of the Kane Brick Co., at Kane, Pa., and the Meredith plant near Reynoldsville. Both plants are fully equipped and ready for capacity operation.

The Chestnut Ridge White Brick Co., New York, N. Y., has changed its name to the Chestnut Ridge Corporation.

Burned clay products of all kinds maintain at present price levels in the Philadelphia, Pa., district. Present quotations are firm, and there is a fairly good volume of inquiries for different specialties, altho the labor difficulties have gone to hamper the desired extent of operations and sales. Common brick is selling for about \$19 delivered on the job, while lesser grade material is fluctuating around \$14 and \$15. Hollow building tile ranges in price from \$60 upwards, according to size. Face brick, now engaging under a slackened call, ranges in quotations from \$35 to \$46 according to the grade of material. The buffs and grays in different varieties are in popular demand. There is a fairly active call for fire brick, with price holding firm around \$70 a thousand delivered on the job.

Building operators at Philadelphia show every desire to go ahead with new construction work at a good pace, but are being held up in their activities thru the strike of local bricklayers. There has been no change in the situation since the mention in the September 23 issue of *Brick and Clay Record*, and there does not seem any immediate settlement in sight. Members of the Master Builders' Association hold that the men have broken a bonafide contract made a few months ago, and will not accede to an advance of \$1.25 an hour in wage scale, as demanded. In this connection, the association has issued a statement saying that "the mason builders and operative builders will make no compromise; this position is supported by the Master Builders' Exchange, representing all the building trades, and has the approval of the dealers in building materials, the architects and the Chamber of Commerce."

Perforated Steel Screens

Of Every Description

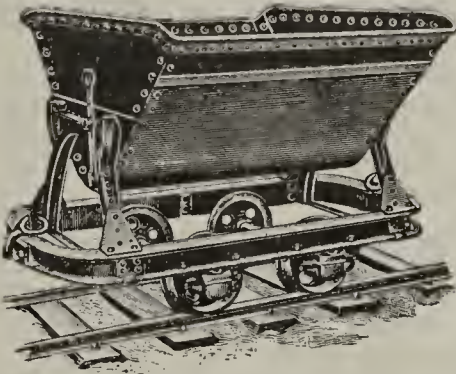
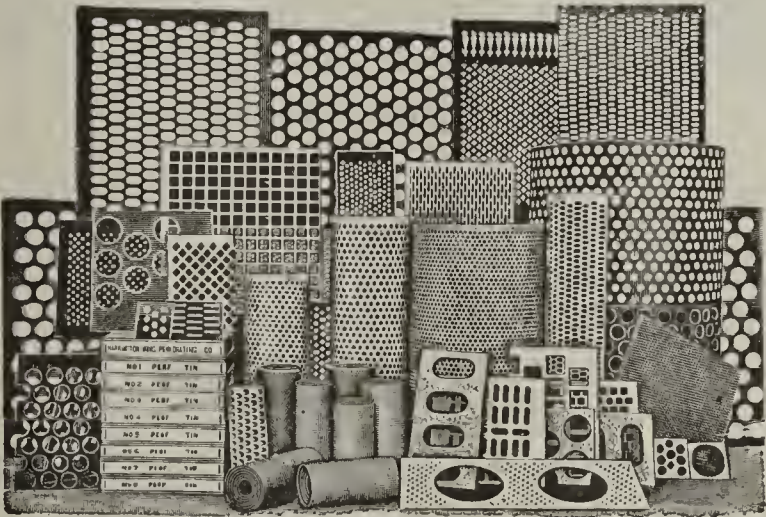
For Screening Clay, Shale, Sand, Gravel, Stone and Cement

No Other Screens Will Give You Equal Capacity, Durability and Satisfaction

The Harrington & King Perforating Co.

635 N. Union Ave., Chicago, Ill.

NEW YORK OFFICE: 114 Liberty St.



PROMPT SERVICE

Your orders for Dump Cars, Platform and Dryer Cars, Buckets, Barrows, etc., will receive prompt attention from us. Our regular line can be shipped on short notice. Equipment of special design built from specifications.

If you have any difficult haulage problems to solve, our engineering department will be pleased to work with you. For this service there is no charge. Let us help you.

THE BIEHL IRON WORKS, Inc.

Office and Works, Reading, Pa.

Branch Office: Detroit, Mich., 725 Ford Bldg.

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We specialize in steel car wheels

Waterbury Wire Rope



Where Rocks "are the rub"

or the rope is exposed to heavy abrasion or runs over a number of pulleys—the "Seale" lay* is more durable because the large outside wires better withstand severe conditions. Waterbury quality—"Seale" laid, is the wire rope combination that beats "rough going."

Whatever the rope use, there is a Waterbury wire rope that wears longer and gives better service. It's all a matter of wise selection of metal and strand. The quality is in every Waterbury rope.

WATERBURY COMPANY 63 PARK ROW, NEW YORK

Chicago San Francisco New Orleans Dallas, Texas

*Whether you know a lot or a little about rope, the 220-page Waterbury Rope Handbook will be a big help in buying the right rope. A copy is yours for the asking.

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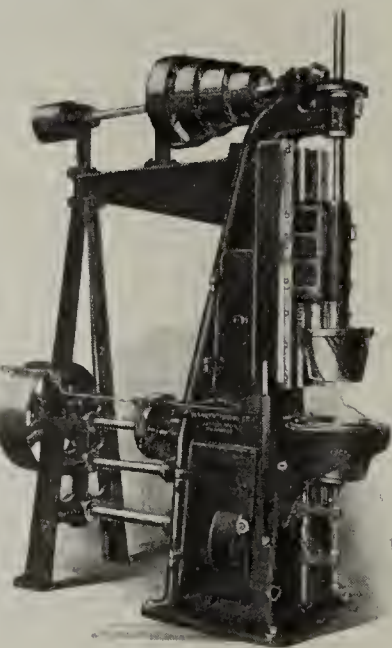
Doesn't know how he got along without it

After two years of satisfactory service with a Baird Pottery Machine, Mr. A. Hupprich, manufacturer and dealer in flower pots, Detroit, Michigan, installed another Baird Machine to take care of the increased business.

Mr. Hupprich has found both of these machines to be very profitable. "In fact," he writes, "we do not know how we ever got along or made money before we started using them. There are no other machines made, that we know of, which can compare in either speed or quality to these machines."

This letter is only one of many that illustrates the profit in manufacturing flower pots. The latest Baird Pottery Machine is adapted to the manufacture of Stoneware, Runner Brick, etc., for which there is a big, profitable market.

It will pay you to investigate what this machine can do toward increasing your profit. Why not write today and send along a sample of your clay?



BAIRD MACHINE & MFG. CO.
265-69 Jefferson Avenue, Detroit, Mich.

Housing work is holding interest at Philadelphia, and architects are busy on a number of interesting projects of this character; brick is the popular material for apartments, flats and other kindred buildings in this locality, and the call for this work is expected to strengthen. Industrial construction during the past two weeks has assumed a more important status, and plans for a good volume of work have recently been filed. These structures include a new one-story, brick machine shop for the Sharples Specialty Co., at Stokley and Westmoreland Streets, costing about \$35,000; a similar type machine shop for the Albro Clem Elevator Co., at D and Erie Streets, to cost about \$15,000; while the Wicaco Screw & Machine Works, Seventh and Wood Streets, is planning for the erection of a new plant on Stenton Avenue, costing approximately \$100,000. The local labor situation has gone to hold up considerable Government work at the Hog Island shipyard, and at the Government docks at Fort and Mifflin Streets.

The Government, thru the United States Railroad Administration, has admitted that Pittsburgh, Pa., brick men are entitled to more money for their product than are those in Detroit and other places. The railroad administration has placed an order for 1,000,000 brick with the Pittsburgh Clay Products Co., and affiliated companies. The brick are for use in the erection of the Scully roundhouse near Walkers Mills, about 20 miles from Pittsburgh. When the military authorities were in command of the industry of the country, the Government sought to buy brick in Pittsburgh and vicinity for \$11 a thousand. Pittsburghers had cost sheets that showed it cost them something more than \$12.50 to produce the brick, but the Government representatives argued that the Detroit manufacturers were getting but \$11 and were satisfied with that figure. Pittsburghers argued that they made a heavier brick and that costs were higher, but the most the Government agents would agree to was to set a tentative price at \$11 and to conduct an investigation later to determine whether the manufacturers were entitled to more. The Pittsburgh makers insisted they were getting \$15 from all buyers. In the contract for the brick for the new roundhouse, the Government now agrees to the price of \$15, plant, or about \$17.50 delivered.

Brick manufacturers in the Pittsburgh, Pa., district have been forced to turn away an order for 3,500,000 brick. The Dwight P. Robinson Co., which holds the contract for the erection of a \$16,000,000 power plant at Cheswick, 15 miles from Pittsburgh, is trying to buy the brick for immediate delivery and at last reports no manufacturer in or near Pittsburgh could be prevailed upon to undertake the job. These brick men feel they could not fill the order unless they dropped all their other customers, and no one was willing to risk his clientele to fill one order. The power plant is being erected by the Duquesne Light Co., of Pittsburgh. It has been contemplated for several years, and, during the last summer of the war the Government had agreed to advance a considerable portion of the money for the project to insure a continuous supply of power to industries which were making munitions. With the conclusion of the war, Government support was withdrawn and the project was halted for a time. Recently financial arrangements were completed, and the light company is trying to have it built with as great rapidity as possible. It is because of this desire for quick action that the brick men are loath to take the contract. To get the brick at once, the contractor may have to bring it in from outside, and that will add considerably to the expense.

Texas

The D'Hanis Brick & Tile Co., of D'Hanis, Tex., has filed an amendment to its charter decreasing the capital stock from \$125,000 to \$100,000.

H. C. Vandaveer, of Arlington, Tex., is building a sewer pipe plant at Thurber, Tex., for the Texas and Pacific Coal & Oil Co., which will be one of the largest clay products plants in the Southwest. The plant will represent an investment of approximately \$750,000 and will manufacture vitrified salt-glazed sewer pipe in all sizes, segment block wall coping, drain tile and flue lining. Part of the stock has been sold to carload buyers of sewer pipe, the Texas and Pacific company holding fifty-one per cent. The company has a surplus gas supply of about 100 million feet per day and a high grade shale.

Wisconsin

The machinery and equipment of the Star Brick Co., which has been idle for a number of years, has been purchased by a new company, to be known as the Kewaunee (Wis.) Clay Products Co., which will commence operations within a very short time. N. O. Wilson, of Minneapolis, and C. Schmiers, of Whitewater, Wis., are interested in the company, and will install new apparatus, in addition to the machinery already in the yard, as it is their plan to manufacture smooth surface brick, silo tile, drain tile, building blocks and other clay products.

Canada

W. M. Davidson, Laprairie, has severed his connection with the St. Lawrence Brick Corporation, Laprairie, Que.

The Citadel Brick & Paving Block Co., Ltd., have moved from 42 Dalhousie Street to 320 St. Paul Street, Quebec, P. Q.

L. W. McArthur, formerly with the National Brick Co., Ltd., Laprairie, P. Q., is superintendent of the Sun Brick Co., Toronto, Ont.

The W. H. Wood brick plant property, Park Street, Brockville, Ont., has been acquired by the Brockville Paper Manufacturing Co., who will erect a plant there.

British Refractories, Ltd., capital \$3,000,000, head office, Montreal, Que., plans to manufacture and deal in brick, tile, sewer pipe, etc.

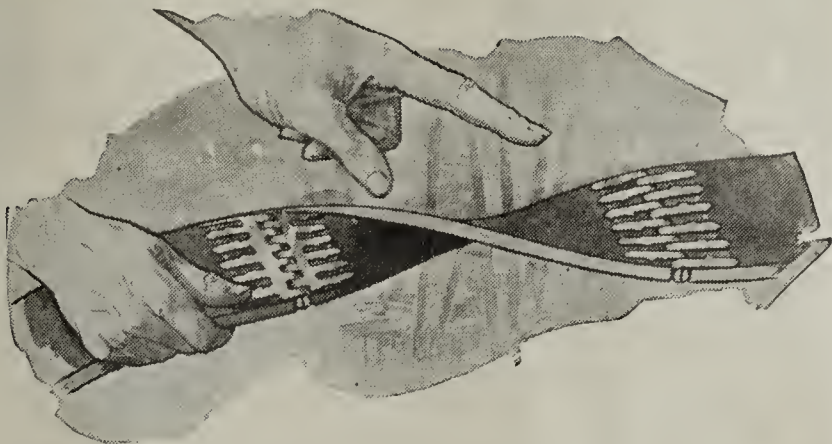
A meeting of the Toronto brick manufacturers was held on September 23 to consider the question of smoke nuisance, for which some of them had been fined by the city.

According to the report of the British Columbia Department of Mines, the Clayburn Co., Ltd., of Clayburn, B. C., was the principal manufacturer of clay products in that province last year, the output amounting to \$250,000.

The Merriton Clay Products Limited, Toronto, Ont., has been incorporated with a capital of \$50,000 to manufacture brick and other clay products. The provisional directors are: L. S. Johnson, G. R. Jackson, C. Newlon and W. A. Hinde.

Some of the clay products manufacturers of Canada have well-known hobbies. Ryland H. New has been carrying off prizes at the Oakville fair and Joseph Russell, M.P.P. has been "cleaning up" the prizes with his Airdale dogs winning five firsts at the Canadian National Exhibition.

Joseph Russell, M. P. P., representing the Toronto brick manufacturers appeared before the Toronto Board of Control recently to present a protest against the restrictions imposed by the smoke by-law. He claims it is impossible to



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The Double Tooth That Grips

ALLIGATOR Steel Belt Lacing is a flexible lacing that grips the belt on both sides. It is the strongest and most durable hinge fastener made. It clinches around the lengthwise fibres of the belt and does not injure them.

ALLIGATOR Steel Belt Lacing can be easily applied by one man with a hammer in a very few minutes. Costly shut-downs are thereby avoided. The ease and quickness of application of ALLIGATOR Steel Belt Lacing makes it an absolute necessity to the efficient shop or factory.

The flexible joint is smooth on both sides and insures a smooth contact with pulley or idlers. It throws the strain in a direct line with the pull. There are no punch holes to tear out, no breaking of the belt in back of the fastener, as in a rigid joint.

ALLIGATOR Steel Belt Lacing can be used on all sizes and kinds of flat belting.

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manufacture brick in accordance with the city's regulations without violating the smoke by-law. The board referred the matter to Property Commissioner Chisholm, who will investigate it.

The following provincial charters of companies located in Manitoba have been cancelled: Brookdale Brick & Tile Co., Ltd., Canada Brick & Coal Producers, Ltd., Canada Tile & Fireproofing Co., Ltd., Canadian Petrified Brick & Stone Co., Ltd., Hackney Tile & Supply Co., Ltd., Manitoba Pressed Brick Co., Ltd., Phoenix Brick, Tile & Lumber Co., Ltd., Reinforced Brickwork Co., Ltd., the Pas Clay Products Mining & Development Co., Ltd., Virden Brick & Tile Co., Ltd., and Western Brick Co., Ltd.

On September 20, the officials and employes of the National Brick Co. of Laprairie Ltd., gave a banquet and reception to the returned soldiers who had enlisted from the Delson and Laprairie plants, at Delson Hall. One hundred returned men and their friends attended the banquet and there were 350 persons present at the reception which took place immediately after the banquet. The majority of the men in attendance had seen four years service overseas, having but lately returned home. P. F. Fleming, general superintendent of the National Brick Co. of Laprairie Ltd. acted as chairman of the festivities.

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Forty Years in the Brick Business

Andrew P. Hillenbrand, of Louisville, who will not acknowledge that he is getting old, but claims he is sixty-four years young, and who has been in the brick business for approximately forty years, having entered the line in 1880, is an interesting character. Mr. Hillenbrand is a real fighter and has battled thru numerous trade fights. Altho he has not always come out exactly on top he has managed to keep going, whereas his early competitors are nearly all out of the brick business.

"I built this old plant in 1890," said Mr. Hillenbrand, "and I don't believe there is a much better plant of its kind today anywhere. She contains the very first Lyons dry press, steam power brick making machine that was marketed. I saw the machine while over in St. Louis attending a convention, and when I came back they had an



Andrew P. Hillenbrand, Sr., of the Progress Pressed Brick Co., Louisville, is standing in front of the Motor Truck Recently Purchased for Hauling Brick.

order for her. She cost me \$75,000, but she was worth every cent of it and then some. The same machine today is marketed as the Fernholtz, but contains numerous improvements that the early model didn't have. However, we've been placing improvements on her right along, and

when we close down this fall we are going to install some new improvements that the manufacturers have recently gotten out. Today she turns out her 25,000 brick in ten hours, and there is no wear out to her. There are very few of the old Lyons models in existence, and you rarely see them advertised. When I get that upper and lower ram improvement on her she will be as good as the newest models, as we've taken care of her.

"In 1890 when we started operations in this plant we called it the Lyons Press Brick Co. The company was formed with myself as general manager; Riley Pflanz, later City Jailer; Dan Murphy, capitalist; Will Slaughter, a coal man; John, Dean and Will Conaway, all brick men. We had a good outfit, and Slaughter got us our coal at cost. After a few years I sold out my interest, and later the Conaway boys purchased the entire plant. It then became the Conaway-Lyons Pressed Brick Co. In 1905 the Conaway boys sold out or entered a merger with the Hydraulic Brick Co., of Louisville, which secured four of the largest plants, and had practically all of the business of the city and district. The Hydraulic controlled the Dumesnil Brick Co., Conaway plant; Lockland Brick Co.; Cook-Neist Brick Co., the latter known as the Portland Brick Co.

"Then a fight started that every brick man who ever had any connection with the Louisville trade remembers. The Hydraulic had the capital, the production, the buying power, the price cutting power, and everything it needed to put the small chaps out of business, and believe me, it went after us tooth and toenail. There was a big demand for brick at that time and a lot of building underway. In the years running from 1907 to 1909 there was a consumption of approximately 60,000,000 brick annually, whereas I don't believe local consumption today is much more than 25,000,000 to 35,000,000 when business is normal, as fancy face brick and concrete construction have reduced consumption of common and hard face brick to some extent.

"During the fight I operated the East End Brick Co., which ran out of clay and was dismantled about three years ago. I also secured the old Henry Krupp plant, which I operated as the Hillenbrand Brick Co., and in spite of the scrapping we managed to make both ends meet and make a little money.

"Then the Hydraulic overplayed its hand and got into a lot of litigation. Some of its plants were later dismantled, and it took several years to settle up the affairs. During the litigation money was needed badly, and I made a blind offer on the old plant which I had built and got it for a song. The old plant originally cost \$40,000 to build, and she would cost \$75,000 to duplicate today considering the cost of construction, and the price of the land, as there are thirty-three acres of fine clay surrounding the plant, less what has been dug out in thirty years. I got control in 1912, and the syndicate almost went wild when they discovered that I'd undermined 'em. That was about the end of the Hydraulic, which never made another brick.

"In 1912 we renamed the plant as the Hillenbrand Brick Manufacturing Co., after it had been known for several years as the Poplar Level Road plant of the Hydraulic Brick Co. A few months ago my boys all came in with me and we renamed her the Progress Pressed Brick Co., in which Andrew P. Hillenbrand, Sr., Andrew P. Hillenbrand, Jr., Carl Hillenbrand and Oscar Hillenbrand control the entire stock."

(Continued on Page 711)

BUCYRUS



"If I Had to Discontinue the Use of My Bucyrus Dragline Excavator I Would Prefer to Go Out of Business."

This is what Mr. W. E. Dunwody, President of the Cherokee Brick Co., Macon, Ga. said about his Class 9 1/2 Bucyrus electric dragline excavator in 1913.

In 1919, after six years constant work, he writes; "All that I have said in the past favorable to your machine, I now re-iterate. If there is anything that I have left unsaid, which I could say, I will be glad to add that to my testimonial."

This is but another proof of the fact that Bucyrus shovels and draglines, whether steam, electric or gasoline stand the punching year in and year out.

Send for Bulletin B.

Here is what Mr. Dunwody said in 1913:
"As to what my experience has been in the use of the dragline purchased from you, I have this to say:
"I have been in the brick business twenty-three years.
"I have manufactured and sold as many as 70,000,000 brick per annum.
"I have dug clay by hand, and with power excavators.
"I have been in plants in many states in the Union, and have investigated the different modes of Clay Mining.
"I have now used the Bucyrus Class 9 1/2 Dragline for three months, and if I had to discontinue its use and go back to operation with an ordinary steam shovel, I would much prefer selling my plant at 50 cents on the dollar and going out of the business.
"Any man who is digging clay where his clay hole is subject to overflow cannot afford to use anything other than a dragline, and there is no machine, I believe, in the United States which is equal to that turned out by the Bucyrus Company."

BUCYRUS COMPANY
SOUTH MILWAUKEE, WIS.
New York Birmingham Minneapolis
Denver Portland, Ore. San Francisco
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"The S S S Special" Automatic Soft Mud Brick Machine



The "S S S Special" is the ONLY Automatic Soft Mud Brick Machine. It is Brick Machine, Bumper, Dumper, and Sander, all combined in one Great Machine.

**It Saves Labor and
Improves Your Product**

The "S S S Special" means
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A Two Cent Stamp May Bring
You Advice That Will Stop
a Waste, Improve Your Ware
or Lower Your Production Cost

Address all communications intended for this department to "Editor Questions and Answers," care of "Brick and Clay Record," Chicago.

How Can Kiln Crowns Be Made Waterproof?

918. *Illinois*—Please advise us the best economical method of rendering kiln crowns waterproof against leakage. Our crowns are of fire brick and laid "headers." It is only nine inches thick and not covered with platens. Thus far we have been using a mixture of clay, sand, lime and a little cement, but a coat lasts but a short time and it is not impervious to a long hard rain.

A cheap and satisfactory method of rendering kiln crowns waterproof, has been searched for for a long time. We doubt if there are very many plants that have found a way to waterproof their crowns that was permanent.

One very good method has been to cover the crown with a layer of ashes, clay or brick bats and then cover this with a slush of cement-lime mortar.

A substance known as "Nox-Aer-Leak" has come to our attention lately which may possibly answer the purpose. This material is put on as follows: one-quarter inch layer is placed on the kiln crown before the kiln is ready for firing and then after the burn has been completed another quarter-inch layer is laid upon the first layer and the process repeated. This is done four times until finally the thickness of one inch is obtained. The first three layers will tend to crack but it is claimed that after four coats have been applied no more cracking will result and the crown will be rendered water proof. At the present time there are quite a number of plants experimenting with this material, but to date have not had time to make all the applications and hence we are unable to determine the practicability of this substance. However, it shows promises of making good.

If any of our readers can suggest a good method of making the kiln crowns waterproof, we shall be glad to hear from them.

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Limits Dense Smoke to Six Minutes Per Hour

919. *Canada*—The brick manufacturers of Toronto, Canada would like to know if "Brick and Clay Record" or any of its subscribers can give them any information in regard to the burning of brick in such a manner that the dense smoke which follows each firing can be cut down to a six-minute limit per hour.

There is a by-law in our city which limits the dense smoke to six minutes per hour, and we are unable to comply with it. Undoubtedly there have been manufacturers in the United States who have been confronted with a similar problem and we would be glad to learn how it was handled. I might say that we have tried all grades of smokeless coal but find it unsuitable for burning brick. It has not a long enough flame to reach the bottom of our kilns. Our kilns are of the dozen-draft type, some round and others rectangular.

a n d ANSWERS

Best Authorities in Every Clay working Branch Are Called Into Consultation—Their Advice is Free to You, Thru These Columns

Should a reply be desired by letter, send a stamped and addressed envelope with your question, and it will be answered promptly.

Many manufacturers in the United States have been up against the same problem as yours and in most cases, we believe, they have been required to move to a point beyond the city limits.

Possibly there have been a few concerns that have successfully combated the smoke evil, but we do not know who they are and hence cannot help you out in this connection. However, possibly some of our readers who see this item will be glad to send us some information on how they would solve the difficulty so that we might forward it to you.

It occurs to us that it would be advisable for you to investigate the new furnace gas producer which has recently been placed upon the market. Some of the claims for this furnace are that it eliminates smoke and can be installed at a low cost.

The Crescent Refractories Co., of Curwensville, Pa., have recently made an installation using this type of furnace and we would suggest that you write them obtaining information concerning their experience with this type of furnace.

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(Continued from Page 709)

Mr. Hillenbrand commented on methods of the old days and present day methods. He in part said: "We've been figuring on a lot of improvements to this old plant. You see I'd gotten fairly well fixed, and was about to retire. In fact I would have quit if the boys hadn't come in with me, as I was getting a little tired of the routine. Now we are feeling our way along, and wondering what is going to happen next. We don't feel like putting in high priced equipment if a big slump in general values is due. However, we have considered a steam shovel and gravity tram for bringing clay in from the field, and we'll certainly install such equipment if we ever reach a point where the demand requires it. We may also install an adjunct to the plant in the form of additional brick making machinery and kiln space.

"We've recently installed our first motor truck, which is of the Indiana make. This truck has a capacity of 2,000 brick at a load. If its soft brick we dump it, and if its face brick, the sides lift off, and the brick are hand passed to the sidewalk. There are some special bodies that are much faster than ours, and we may install one later on.

"How we made money in the old days is a mystery, but the answer is in the fact that labor and coal didn't cost us much. However, with mine run coal costing us \$2.50 to \$4 a ton, according to quality and market conditions, and common labor costing \$3 a day and up, we've got to come to labor saving devices wherever possible, or the concerns that have got that sort of equipment will make us feel mighty sick if they don't put us out of business."



A Record of Good SERVICE

A clay-digging machine that stands the rough usage of unskilled workers, that is unprotected from heat, rain and freezing weather, yet continues after many years' service to give large production with little maintenance cost, is surely a machine of unusual merit.

An early model Buckeye Clay Digger has been digging and mixing clay for over 8 years at an Indiana clay plant, and is reported as being "still on the job." The owner likes this machine because it requires "low upkeep, low running expense and gives a good mixture."

The Buckeye shaves thin slices of material, cutting different strata from bottom to top, and mixes the clay thoroughly. Can be operated successfully on banks that are too shallow for other machines.

The experience of the above clay manufacturer has been observed among other brick and clay men.

This observation leads us to believe that there are many clay pits that could profit by and get a better mixture with the Buckeye Traction Digger.

May we send you data? Ask for a copy of "Digging Clay for Profit."

The Buckeye Traction Ditcher Co.
Findlay, Ohio

Buckeye

Traction Digger

The new Model C. M. is equipped with a combination conveyor which enables operator to change his discharge from pit to bank delivery, alternating as desired.

Rossendale-Reddaway FABRIC BELTS *for* EVERY SERVICE



More than a mile of "DURBAR"

solid woven cotton belting
—a single export order

These eight belts have a total length of 5520 feet, average 25 inches in width and weigh all told about 12½ tons—a "hefty" answer to the question "can a fabric belt take the place of leather?"

As a matter of fact, without considering the lower cost of "Durbar" compared to the double leather belt which would deliver equivalent power, there are many drives where a "Durbar" solid woven cotton belt stands up under service conditions that would prove the quick ruination of almost any other type of belting.

In the foreign service for which this belt shipment is intended, the conditions call for the highest grade of solid woven cotton belt—and "Durbar"—a Rossendale-Reddaway belt—was selected. The ability to furnish the right belt for the particular drive is one of the advantages of the Rossendale-Reddaway line of fabric belts for every service.

Ask our engineering department for recommendations for your difficult drives. Their advice is competent—and free.

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About the Potash Deposit in Pennsylvania

It appears that reports which were circulated concerning the finding of extensive potash deposits in Pennsylvania have not been exactly true to facts. On page 412 of the August 26 issue of *Brick and Clay Record*, a short item was published concerning this deposit. Credit is given to G. W. McNees, and Geo. H. Ashley, state geologist of Pennsylvania, for the information that these potash deposits are only another of the bat guano deposits such as are common in caves all thru the Appalachians. Some of the material has apparently been redeposited in crevices of the rock in such a position as to be protected from rain and it was this that formed that basis of the marvelous reports sent out.

* * *

Steel Strike Fails to Affect Brick Industry in Cleveland

No effect upon the brick industry in Cleveland, Ohio, as a consequence of the national steel strike can be noted after the strike has been in effect nearly two weeks. This is the opinion of leading manufacturers and distributors who had looked forward to possible adverse conditions. If anything, the demand has been stimulated since the strike became effective. What the trade in Northern Ohio has been looking for was some relief from the car shortage, which the industry was led to believe was caused in part, if not largely, thru the large number of cars required to move fabricated material to distant points. It was expected that these cars would be relieved, many of them for other uses, and the brick industry would get its share.

"As far as our investigation shows, we will not see an increase in the number of cars for use in bringing material into Cleveland, or shipping it to nearby points," says J. E. Morrissey, head of the brick department of the Cleveland Builders Supply & Brick Co. "We have learned that cars formerly available to local steel interests were those which have been coming into the territory with pig iron. As these are no longer coming in, the only cars available for brick transportation will be those in local yards."

Investigation by R. L. Queisser, of the R. L. Queisser Co., shows that as far as face brick alone is concerned, there are at least 500 cars of face brick of all descriptions on hand by local dealers and which have no prospects of being filled. This is due, Mr. Queisser claims, not to a shortage of brick, but to a shortage of cars. "When representatives of the face brick association took this matter up with the car service division of the United States Railroad Administration officials at Washington could offer no solution," says Mr. Queisser. "However, early relief from this car shortage situation is imperative, otherwise all building must be curtailed. Even in cases where brick have been delivered on the job, construction is held up because of delayed delivery of lumber and other materials. So it is not alone brick delivery that is affected. While the early days of the steel strike do not seem to show that there will be improvement in the car situation, it would seem certain that if there is no steel moving, many of these cars must be relieved at an early day for use in other material lines."

* * *

There is little danger of overlooking possible barn construction in rural trade, but such items as silos, milk houses, feeding platforms for hogs, sheds for housing machinery are no less important."

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

Selden Companies Combine

Recently, announcement of the change of the corporate name of the Selden Truck Sales Co., of Rochester, N. Y., to that of the Selden Truck Corporation, with factory and executive offices at Rochester, N. Y., was made over the signature of George C. Gordon. At that time stock in the Selden Truck Corporation was offered for subscription by brokers in New York, Cleveland, Chicago and Rochester and the entire issue was over-subscribed before any public announcement was made.

The new organization, as it now exists, is a re-incorporation of the combination of the Selden Truck Sales Co. and the Selden Motor Vehicle Co., the latter organization having been the manufacturing division of the former company for years.

In an interview with George C. Gordon, who will be president of the combined Selden companies, he said: "This new consolidation permits of a more economical administration of Selden affairs, as it amalgamates the two formerly separate companies. Expansion will begin immediately by increasing our manufacturing facilities to keep pace with the steady growth and increase which our business has enjoyed since 1912."

Plans are already under way for an extension of the present factory, which will include a new administration building. With these enormously increased facilities, they will be in a position to double their output next year.

The rapid strides made by the Selden company and the high regard in which Selden trucks are now held is best evidenced by the fact that during the period of three years from 1915 to 1918 the business increased over 250 per cent. The company during that time established agencies in 337 sections of the United States and Canada, 36 in England, 28 in France, in addition to agencies established in other parts of Europe as well as in Asia, Africa and South America:

The Selden company's slogan, "It has been Selden since 1877," brings to mind the early efforts of Mr. George B. Selden to establish his rights on the "Selden patents," at which time it was proven that unquestionably, Mr. Selden designed the first gasoline motor propelled automobile in all the world, yet the courts said to him in essence: "Valid but not infringed" in the modern automobile. And, as a result, the inventor broods in embittered silence because of this fact. Yet the Selden business has grown upward and upward and prospered as a result of the energy and efforts of President George C. Gordon, the banker, who in his early days possessed sufficiently broad vision to foresee the possibilities of the commercial vehicle, and who, in spite of momentary rebuff, built up an organization world-wide in its scope.

The first gasoline motor propelled road wagon in all the world was a Selden; and the present types of Selden trucks are the product of continuous experimentation, observation and experience in manufacture since the day of their inception.

The new combined organization, to be known as the Selden Truck Corporation, with factory and general offices in Rochester, N. Y., will be officered by the same men who have "blazed the trail" and placed the Selden corporation in the foremost ranks of motor truck manufacturers in the world today.

* * *

Here's a bit of shop talk that should be of interest to clay manufacturers: The Theodore Hiertz Metal Co. are in receipt of an interesting letter from Jacob Maes, brick manufacturer in St. Louis, who writes as follows:

GEO. A. FULLER CO.



"What Size Do You Want?"

"All right, I'll have it on the job in half an hour."

That's the way the Geo. A. Fuller Co. handle their Pulsometers.

They keep a stock of various sizes on hand ready to dispatch to a pumping job on a moment's notice.

Summon a Pulsometer anytime—it's **always** ready—and never needs "tuning up."

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For over fifty years Pulsometers have been first aid to contractors in getting their pumping jobs done in a hurry—

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Liberty Steel Products Co., McCormick Building, Chicago.	F. H. Hopkins Company, Montreal.
Beckwith Machinery Co., 1227 West 9th St., Cleveland.	Kern-Hunter, Inc., 208 Wells St., Milwaukee.
Queen City Supply Company, S. W. Cor. Elm and Pearl Sts., Cincinnati.	Mr. Wm. H. Ziegler, 440 Temple Court, Minneapolis.
Mr. H. A. Paine, 119 Main St., Houston, Tex.	Borow Machinery Co., 220 West 42nd St., New York City.
J. L. Welborn, Hattiesburg, Miss.	Harron, Rickard & McCone, 139 Townsend St., San Francisco.
Miller Supply Company, Huntington, W. Va.	Shippers Commercial Corporation, L. C. Smith Bldg., Seattle.
Edelen & Co., 235 Commercial Trust Bldg., Philadelphia.	Kelly Powell Limited, Winnipeg, Canada.

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Insure Uninterrupted Transportation this Winter

Never within the history of the brick and clay industry has the dependability, adaptability and economy of motor truck transportation become a vital business necessity as today. The winter days ahead make it imperative for you to realize the importance of choosing the make of trucks that will haul and deliver your products, goods, materials and supplies every day this winter without interruption or delays.

To insure Uninterrupted Transportation 365 days in the year, the All-Year Cab for Kissel trucks was originated, perfected and patented. By adding the winter attachments—side, door and window attachments, the open cab, standard equipment on the four largest Kissel models, is quickly changed to an enclosed cab, warm, dry and comfortable—giving complete protection to drivers in the most severe winter weather—removing the necessity of layups on account of storms—increasing the efficiency of drivers and results for owners.

Kissel trucks, equipped with the powerful Kissel built engine, maintain schedules because they are built to overcome obstacles unsurmountable with trucks of less development. The nearest Kissel dealer will study your transportation requirements to insure your getting the right sized Kissel truck, thereby reducing your transportation expenses to the proper ratio of goods hauled and miles covered. Specifications, prices, etc., sent on request.

KISSEL MOTOR CAR CO., Hartford, Wis., U.S.A.

KISSEL TRUCKS

"I have been using Non-pareil Anti-Friction Metal for many years, but at first for babbitting shafting boxes and my dry press brick works, which as you know is very dusty work. Later tried it for babbitting my clay grinder rolls, where we used bronze metal. Find that it does as well and lasts as long, as the bronze. The bronze boxes I had to have made, and when they were worn out, had to discard what was left to the scrap pile. Now whenever boxes have to be renewed, we can use what is left of the Non-pareil metal over again and do the work ourselves."

This letter indicates the time, labor and material saving advantages in using Non-pareil Anti-Friction Metal in various parts of the plant, on line shafting, heavy drives, engines, motors, etc.

A folder describing Non-pareil Anti-Friction Metal may be had on request by addressing the Theodore Hiertz Metal Co., 8011 Alaska Avenue, St. Louis, Mo.

✕ ✕ ✕

Trucking Associations Develop Transportation

That transportation by truck has come to take its place alongside of transportation by railroad is indicated by the organization of truck transportation associations in several of the larger cities, says "Haul-Age," the new dealer publication of the Garford Motor Truck Co.

These associations have been founded by cartage and storage concerns who utilize the motor truck in their daily business.

The purpose of the associations is to promote and further in an organized, systematic manner, transportation by truck. Among their chief and initial objects is the establishment of inter-city truck systems and rural express lines.

The associations by means of centrally conducted offices will aid their members in eliminating, to a great extent, the possibilities of an idle truck, under capacity load and light return loads.

The offices, which serve as the nerve centers for local truck activities are being established in prominent downtown locations. Records, operated on the registry book system and containing data on all trucks available each day, are kept on blackboards in the offices where they are accessible at all times.

Thru the plan merchants and manufacturers may obtain immediate trucking service by a single call instead of being forced possibly to call the several trucking concerns within the city.

The plan, therefore, works not only to the mutual benefit of the members, but to the advantage of patrons.

Toledo and Detroit cartage concerns recently have founded such associations, and efforts are now being made to affiliate the two, in order that the truck transportation efficiency between the two cities may be increased.

✕ ✕ ✕

The Celite Products Co., 11 Broadway, New York City, is issuing a new and interesting bulletin describing in detail, standard engineering practices of insulating various types of furnaces; such as, annealing, heating, forging, malleable, gun, glass, etc. Copies of this bulletin, B-8-A, will be mailed on request to any one interested in this subject.

✕ ✕ ✕

Number Eleven of "Hill Clutch Equipment," issued by the Hill Clutch Co., Cleveland, Ohio, is ready for distribution, and you may obtain a copy by writing for it.

✕ ✕ ✕

Catalogs 30 and 33 are being distributed by Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., the first mentioned dealing with direct-current motors and generators. It is very carefully indexed, making its contents of convenient access to readers.

Catalog 33 illustrates and describes alternating-current motors, and a copy of it will be valuable to manufacturers using this type of equipment. The catalogs will be sent free on request.

✕ ✕ ✕

The Arnold-Creager Co., New London, Ohio, reports that the Remillard Brick Co., of San Francisco, Cal., are installing another one of the S. S. S. special automatic soft-mud brick machines at their Pleasanton, Cal., plant. This makes two of these machines on this yard.

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BRICK *and* CLAY RECORD

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all depart-ments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit sub-scriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

"He Who Will Not Work Shall Not Eat"

ANOTHER CRISIS confronts us! A few months ago a railroad tie-up threatened. Not many weeks past a steel strike was staged. Now it is coal that courts consternation.

A bituminous coal strike would be a serious blow to production in the clay products manufacturing industry. That such is imminent and eminent, one may gain from the columns of the daily press.

CLAY MEN INTERESTED

The clay products manufacturing industry ranks third among coal consumers, preceded only by the iron and steel industry, and coke and gas plants. This fact is sufficient to demonstrate the interest which the readers of this magazine have in the coal controversy.

For the benefit of those who have not followed the developments to date, the facts of the situation are about as follows:

At a joint conference of miners and operators, called at the request of the miners "to negotiate a contract to be effective upon the expiration of the present agreement," held at Buffalo the last week of September, the miners presented demands including a six hour day, a five day week and a wage increase approximating sixty per cent. Incidentally the miners said, "We hold that the existing contract automatically expires November 1st; we hold that all our demands must be met or we will call a nation-wide strike on November 1."

THE OPERATORS' BOMB SHELL

The operators looked over the list of demands and said, "We hold that the existing

contract *does not* expire until President Wilson formally declares peace; we hold that one party cannot cancel a contract without the consent of the second party; we hold that even if we agree to a new contract the miners' committee is here without proper authority to come to an agreement," and furthermore "these demands are radically extravagant and manifestly impossible of acceptance."

A deadlock ensued, which has not been broken at this writing, altho Secretary of Labor Wilson has taken a hand in the matter and is believed to be making some progress toward an amicable settlement.

There are many features of this controversy which we might be led to discuss but the most worthy of attention is the demand for a six hour day, five days a week.

MOST OF US ARE WORKERS

We are living in an age in which the vast majority of us,—business men, professional men, tradesmen, bankers, laborers, mechanics, etc.,—find that it is absolutely necessary for us to work in order to exist. Nearly six thousand years ago was issued the Divine injunction: "By the sweat of thy face shalt thou eat bread," and so far as we are informed this condition still holds good. Men have tried to fly in the face of this immutable law for this age but every time a sufficient number have ceased from their labors, chaos and confusion has followed.

At the dawn of modern history in America there loomed large upon the horizon of early colonists one, Captain John Smith. The events surrounding the founding of Jamestown, Va., are familiar to every student of American history. Captain Smith was one of a party of colonists that sailed from England in December, 1606. More than half of the

party was coming to our shores to acquire sudden riches and then hurry back to England. They never expected to work. However, they were soon disillusioned.

A WHOLESOME LAW

Gold nuggets were not to be gathered up in baskets. Hunger, famine, pestilence, disease and death soon overtook the little party which faced annihilation. At this juncture Captain Smith came into power and issued his famous mandate: "You must obey this now for a law that *he who will not work shall not eat.*" His ultimatum had a most wholesome effect. Order was restored and failure turned to success.

Economic experts have declared that under the existing circumstances as a result of the world war, the amount of production necessary to guarantee sufficient commodities to sustain the present standard of living *can not be achieved by men working only six hours a day.* At least eight hours is absolutely essential to keep prices within reasonable bounds and supply enough food, clothing and other

necessities to properly care for the world's needs. Under these circumstances, the proposed six hour day of the miners is tantamount to economic anarchy. Nothing but hunger and strife can follow its universal adoption.

"SIX DAYS SHALT THOU LABOR"

And as for the five day week, it is a confusion worse confounded. The six day work-week dates back as far as Sinai. It has been observed by mankind for centuries with wholesome effect. It is right because it came from a source from Whom, it is written, has come "every good and perfect gift" for man in the flesh. During the memorable French revolution an attempt was made to substitute nine days of work for six before taking one day of rest, something on the decimal order, but it proved to be a miserable failure. The human body demands a day of rest in every seven.

Just as the nine day work-week has failed, so will the five day week because both are fundamentally wrong. "Six days shalt thou labor" rings down the halls of time as a wholesome and unchangeable law.

Work or Want

Production is a world necessity.

Cost of living is increased by empty shelves and idle plants.

Decreased output means increased selling price.

Greater production alone can assure the safety of our nation.

Be a peace patriot!

Produce!

Woodrow Wilson:

"The immediate and pressing need of the country is production, increased and increasing production, in all lines of industry. The disorganization and dislocation caused by the war have told nowhere so heavily as at the industrial centers—in manufacture and in the many industries to which the country and the whole world must look to supply needs which cannot be ignored or postponed."

Frank O. Lowden:

"You cannot divide more than you create—that is fundamental. Let it sink in. It's a principle which every one should keep in mind.

"It's as simple and unromantic as the alphabet—you cannot take more profits and wages out of a business than it produces."

William Howard Taft:

"Of course there is an urgent need for all the necessities of life to assure industrial stability and to reduce the cost of living. One of the main sources of the high price of commodities is the necessity for replenishing stocks which were reduced by the war."

CLAY PRODUCTS INDUSTRY OUTCOME *of* COAL

*Secretary of Labor Wilson to Try to Break Dead-
Lock Between Mine Operators and the Coal Mine*

AS THIS ISSUE is being distributed thru the mail there is a matter being discussed in Washington which vitally affects the whole nation and particularly the clay industry. Secretary of Labor Wilson, in an effort to avert the strike of the bituminous coal miners, called for November 1, succeeded in exacting a promise from the wage committees of the central competitive field coal operators, and the United Mine Workers, to meet with him in Washington on Tuesday, October 21. This conference was arranged after it appeared that all negotiations between the miners and operators had reached a point where there was no hope for an end to the deadlock which has existed during the past few weeks.

Brick manufacturers are watching the development with keen interest because of the important influence the outcome will have upon the whole industry. Thus far no progress has been made between the operators and miners and everything stands at a deadlock with no immediate prospects of a definite settlement. The miners still maintain that they can consider no decision that would not grant them each of the fourteen demands asked for. There is no alternative. The operators on the other hand, besides asserting that the demands of the miners are preposterous, declare that the existing contract does not expire until President Wilson has formally declared peace, and even if they agree to renew the contract, the miners' committee have not the proper authority to come to an agreement.

IMPORTANT DEMAND MADE BY MINERS

The essential features of the four most important of the fourteen demands that have most public interest are:

1. That the present agreement between the operators and miners which it was so generally understood would not expire until April 1, 1920, shall be considered as null and void after November 1, 1919.
2. Hereafter the miners shall work only five days a week and only six hours a day.
3. Wages shall be increased sixty per cent.
4. For overtime work there shall be a fifty per cent. additional compensation and for all work on Sundays and holidays the extra pay shall amount to one hundred per cent.

The miners have issued a call for a general strike of all bituminous mine workers thruout the United States, same to become effective November 1, 1919, should a satisfactory wage agreement not be reached.

The demands for a six-hour day and a five-day week would allow only approximately twenty-five actual working hours a week, and which with no double shifting or use of productive machinery, as is also demanded, would mean a reduction of possible productive effort to practically one-half of the present altogether reasonable standards, with resulting great increase in costs. National necessity demands the greatest possible production of essential commodi-

ties. It is also feared that should these demands be granted, this success might possibly lead to similar demands on the part of workers on the railroads, steel industry, building trades and even farmers, resulting in a revolutionary change in national industries and an enormous increase in the already exceedingly high cost of living. Machinery in this country is not so sufficiently developed to meet the conditions that would exist should any such epoch-making steps take place. There is already a shortage of labor supply in the United States and any reduction in working hours in national industries, such as might lead from the coal situation, would seriously menace production. Coal is a basic industry, and it is reasonable to believe that any success attained in shortening the working hours would be followed by similar demands made by other industrial workers.

PRICE OF COAL MAY BE DOUBLED

The acceptance of the sixty per cent. increase in wage scale, time and a half for overtime and double time for Sundays and holidays, together with such indirect increases as would result should the other demands be granted, would more than double the already high cost of producing coal with consequent large direct and indirect additions to the cost of living of every citizen.

Because coal is a basic need, none can escape the effect of its increase in cost. The farmer will be affected in heating his house and in the price of farming implements because implements cannot be made without fire. We must have bread; coal must furnish the heat for bread-stuffs. We must have clothing, shoes, food products, building materials and furniture; coal must furnish the energy for the factories that produce them. Coal must move our trains, without which distribution will be crippled. Coal is fundamental and the cost of coal is mainly the cost of handling because it is not manufactured but found in the ground ready for use except for digging it out and bringing it to the surface from where it may be distributed.

NEW JERSEY SENATOR OPPOSES DEMANDS

Senator Freilinghuysen, of New Jersey, made a plain talk before the Senate recently as to just what the miner's demands are, and it was all the more significant because it expressed his views in his capacity as chairman of the subcommittee which has been charged by the Senate with making an investigation of every phase of the coal industry in the United States. Among the things he said were the following:

"I have been a friend of labor, of organized labor, thruout my public career both in the Senate of my native state and in the Senate of the United States, but I am not a friend of tyranny, whether it be the tyranny of the capitalist or the tyranny of the professional labor agitator. I believe that the laborer is worthy of his hire, but I do not believe that any man or set of men is entitled to a wage that will

RY VITALLY AFFECTED *by* WAGE CONFERENCE

*ck Which Has Resulted from Negotiations
orkers and Avert Strike Set for November 1*

mean the placing of an intolerable burden upon the great mass of our population already weighted down by high taxes and the high cost of living.

"This action of the United Mine Workers of America should evoke, as I feel sure it will evoke, an outburst of indignation on the part of an outraged public.

"Only a man of impaired intellect will fail to see that this is not a controversy which alone affects the coal operators and their employes. It is one that affects and seriously affects every house in the land, and especially the home of the humblest citizen who depends upon coal for fuel purposes."

HOW CLAY INDUSTRY MIGHT BE AFFECTED

Should the terms of the miners be met, it would have a demoralizing effect upon the clay industry. One manufacturer is of the opinion that it would probably increase the selling price of brick fully five or six dollars a thousand, which is prohibitive and would not be borne by the public. Should such a condition come to pass that it will be necessary to increase the cost of clay products to such an extent, it might be disastrous to the industry.

Further than this, should the granting of the full demands eventually result in the adoption of a six hour day in the building trades, it can be readily seen that the cost of building would then be most prohibitive and the clay products producers would suffer as a consequence.

Some of the national associations have already mailed their entire membership letters advising the sending of telegrams and letters to the coal operators and government representatives, urging them to oppose the granting of the miners' demands. Every clay products manufacturer should follow this example if he has not already done so because he is vitally affected by the outcome of this controversy.

RECOMMENDS COAL DATA CLEARING HOUSE

In connection with the coal situation it is of interest to review the recent recommendations made by Senator Freilinghuysen with regard to a "clearing house" that would be formed by the consolidation of all present government bureaus and agencies, with an enactment of legislation that would give it authority to gain complete information from the coal industry. This information would embrace wages paid miners, cost of production to operators based on investment, data relative to wholesalers, jobbers and retailers, and the cost of transportation.

In making his suggestion, Senator Freilinghuysen said that the object of the proposed bureau or clearing house would be to trace every element of cost of coal production in order that the public might determine what is a fair and reasonable price for the commodity. No attempt would be made, said the senator, to fix price, saying that the public plus the law of supply and demand would satisfactorily control prices, if his ideas are adopted.

Inasmuch as the plan outlined by the Senate committee chairman includes joint operation in connection with the railroads thru the instrumentality of the transportation board, the idea if carried out would in effect restore a condition similar to that under the Fuel Administration.

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High Record in Loading Bituminous Coal

The Railroad Administration announces that as indicating the efforts being made to adequately handle the coal situation, a report has been received showing that for the week ended September 27, Pennsylvania Lines East loaded more cars of bituminous coal than ever before in the entire history of the road. In that week, Pennsylvania Lines East loaded 24,158 cars of bituminous coal, which is 1,022 cars more than its next highest previous record, which was for the week of August 23, 1919.

✻ ✻ ✻

Industrial Research

We are apt to forget at times the real values of industrial and technical research. Current affairs move so swiftly these days, that the strictly practical man, engrossed in plant and production activities, gives but little thought as to what is going on in this direction—and incidentally, for his direct benefit. It is only when he gets out and mixes a little with his fellow men at a meeting or a convention, hears a talk on this or that subject which goes beneath the surface in scientific ends, that he realizes more and more just what is being accomplished in the laboratory and in the field.

The ensuing values and advantages resulting from research activities cannot be over-estimated. Many important developments and betterments in ceramic work have come from the laboratory; the war period, now past, demonstrated this most forcibly in many ways. The scientific man and the college professor are highly essential factors in any line of industry which calls technical skill, efforts and brains for desired attainments—and the ceramic field, decidedly, is no exception to the rule.

An interesting example of just what neglect in research means, and conversely, what scientific investigation at the right status will do, is found in the case of Australia. Up to within about twelve months ago, there was little or no movement in this country to investigate the possibilities of its resources, or to see what might be done with native materials. But during this time, a vast change has ensued, systematic and thoro research has brought about a different trend of affairs and opinions—it has shown local manufacturers things they never dreamed of, and in many varied lines of endeavor.

For instance, among the developments in ceramic circles, a pottery at Perth has eliminated heavy losses in the production of vitrified ware, thru inability to secure an imported product, by using local clays. Numerous tests under way in the months past have shown conclusively that Australian clays are highly effective for the particular manufacture. Again, Seger cones, heretofore imported, are now being made from local clays. Matters of chemical origin and operation, and other kindred work closely allied to the ceramic industry, are undergoing changes for improvement and betterment, and due to investigation and research in the laboratory.

And take other lines of manufacture. It has been demonstrated that a good quality of paper can be made from trees of the eucalyptus family, so prolific in this country; that *Posidonia* fiber can be employed for commercial service in ways never thought of; that kelp can be used effectively for the production of insulators, buttons and many other articles; that water hyacinth or river weed can be utilized as a source of potash, and so on.

Worthy research work is well worthy of utmost consideration. Movements in this direction should be supported, and heartily. Technical investigation leads to bigger things, bigger developments and greater possibilities. It is the keynote to substantial success in technical or scientific industries.

* * *

Railroad Car Shortage

Walker D. Hines, Director General of Railroads, authorized the following: Continued efforts are being made by the Railroad Administration to place all available equipment in service in order to meet the car situation. In the six days from September 20 to 27, 713 new freight cars of different descriptions were put in service.

On September 27, of the 100,000 cars ordered during Federal control, 68,365 had been completed and were in service and 8,058 had been completed and were in storage. These cars in storage are being lettered and numbered and placed in service as rapidly as possible; 23,577 of the total cars ordered remain to be built.

* * *

Neglect of Foreign Trade

Complaints are being received by those in close touch with overseas trade of a lack of interest on the part of American manufacturers in maintaining their present hold on foreign markets. The truth is, that as almost every branch of industry is at the moment faced with a home market and an overseas market bare of stock and equally clamorous for supplies, it becomes exceedingly difficult to meet all demands. But it is contended that in too many cases manufacturers are filling up their books with orders on home account for many months ahead, leaving no surplus for export.

The National Foreign Trade Council is strongly of the opinion that manufacturers are not showing the interest they should in the export trade. What are the reasons? They may be summed up in the statement that the home trade is lucrative and manufacturers can get cash at once. The temptation, therefore, is very strong to say to the foreign buyer: "We are too full of home orders to trouble about you; come to us next year." But the foreign buyer will not wait. He will place his order in England, Japan or Germany. The shortsightedness of such a policy is evident when it is remembered that it is very difficult to recapture an overseas market once it has been lost. It cannot be too strongly emphasized

phasized that in a neutral market the buyer does not greatly care whether his goods be British, American, Japanese, or even German. If he becomes accustomed to non-American goods, he will not readily change his source of supply in the future.

We do not think that the American manufacturer would readily give up his overseas connections, but it is true that many manufacturers find themselves in a serious dilemma. They must refuse to meet the demands either of some of their domestic trade or of all their foreign trade. We believe that the importance of export trade is, from a national point of view, so overwhelming that the manufacturer would be serving the interests of his country, as well as his own, if he could so arrange his order that overseas demands should secure a fair share.

The heads of our great business concerns should seriously consider the question as one of policy, and we have no doubt that the claims of overseas markets will not be disregarded. Our keenest competitors, England and Japan—to be followed sooner or later by Germany—are sparing no efforts to establish themselves firmly in overseas markets. Unless the American manufacturer is equally energetic he may find himself in the future bitterly regretting the fact that he did not add other strings to his bow in the shape of good overseas connections.

* * *

Houses and Homes

America needs homes. In 1890 forty-eight per cent. of our people were home owners; in 1910 this per cent. dropped to forty-five and today it is estimated to be only forty-two. Home-owning going down—to what? To tenantry, absentee-landlordism, to slums, that disease of society which has been raging at the heart of the major European nations since Watts with his steam engine made it possible to centralize industry?

The stoppage of building during the war has left us a million homes short. That which has long been an industrial handicap has now become a national danger. The need of houses to stabilize the labor market may become a demand for homes to save a nation. Thus it happens that the most important thing to be said about industrial housing at the present time is to watch for a new point of view in approaching it. A new vision is needed.

* * *

Bulletin Issued on Magnesite Industry

Brick and Clay Record readers will perhaps be interested in the present situation of the magnesite industry as covered by the six page leaflet containing excerpts from monthly reports on mineral investigations of the Bureau of Mines, Department of the Interior, for September, 1919. Most of the space this time is given over to the activities of the Canadian magnesite industry. Those who are interested, may obtain a copy of this report from the Bureau of Mines.

* * *

Cargo of Brick Grounded Off Bridgeport

The two-masted schooner William L. Peck, with a cargo of 90,000 brick, grounded off Bridgeport, Conn., during a storm on the night of October 3 and was badly damaged. The captain and members of the crew made their way ashore in a small boat. The Peck has been engaged in the brick carrying trade between Connecticut and New Jersey ports for some years.

COMMON BRICK MEN SCHEDULE BIG MEETING

Annual Conventions of The Common Brick Manufacturers Association of America and the N. B. M. A. to Be Held Jointly at the Deshler Hotel, Columbus, Ohio, February 16 to 20, Inclusive, 1920

WHAT PROMISES TO BE the biggest gathering of common brick manufacturers that has ever met under one roof, will take place during the week commencing February 16, 1920, at which time a joint meeting of the Common Brick Manufacturers' Association of America, and the National Brick Manufacturers' Association will convene at the Deshler Hotel, Columbus, Ohio.

Columbus was chosen because of the attractive invitation given by the Ohio clay manufacturers and also because it is the center of the memberships of common brick manufacturers of both organizations in the United States.

The industry is experiencing an unusually good year and every indication points to a record breaking attendance at the annual meetings of the above organizations. Besides this, the Common Brick Manufacturers' Association of America is growing rapidly and expanding wonderfully into a large and important organization and serving a very important function for the common brickmakers.

Some of the most important work that it is carrying on at the present time is the promotion of common brick which is being done by educating the architect, aiding the contractor, and advertising the advantages of brick to the people. All brick men will want to attend the convention in order to learn of the progress of the developments made in this direction.

The first two days of the meeting will be under the auspices of the Common Brick Manufacturers' Association of America. This will be a splendid opportunity for the membership to become acquainted within its own circle and to meet the officers who have taken the reins at the headquarters within the past year. Both Wm. Carver and Ralph P. Stoddard are new to many of the manufacturers and those who have not had the opportunity to meet these two splendid gentlemen, should take this opportunity to become acquainted.

On Wednesday there will be a joint session of both the Common Brick Manufacturers' Association of America, and the N. B. M. A. A joint banquet will be held on Wednesday evening. The rest of the week will be given over to the regular meeting of the N. B. M. A., thus between the two organizations the meetings will begin on Monday, February 16, and end on Friday, February 20.

A SURPRISE IN STORE ON ADVERTISING

The two most important subjects that will be taken up at the joint session of the two organizations will be one on advertising, at which section a very prominent advertising man will be the chief speaker. This session promises to be an innovation on advertising talks and something entirely new along this nature, will be presented. The talk will be largely illustrated and demonstrative on what advertising can do and it will be of exceedingly great interest and surprise to

every one. The main purpose of this session will be to get the members to understand the spirit of the campaign and to learn more facts on advertising. In fact, it will be a college course on the subject of advertising condensed into one session.

The second feature of the joint meeting will be the architectural section, which will be in charge and under the direction of D. Knickerbocker Boyd, a prominent Philadelphia architect who is doing important work for the association. Among the items to be taken up at this session is that of structural standardization. There is hardly any doubt but that a great deal of good can come out of a discussion on this important subject in which there are so many inconsistencies practiced in various cities thruout the United States.

While the program has not been fully completed, it is proposed to have this convention one of the greatest of its kind ever undertaken and it will be well worth the attendance of every manufacturer of common brick. Some very prominent speakers of national reputation will grace the program. Special entertainment features, some of which will be arranged especially for the ladies, are also being prepared. With regard to attendance, subjects to be discussed, prominence of speakers and entertainment features, this convention promises to surpass all others.

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Secretary Stoddard to Visit Brick Centers

Ralph P. Stoddard, secretary-manager of the Common Brick Manufacturers' Association of America, is preparing to start on a two weeks' trip thru various states, stopping off at several points to address common brick manufacturers. The first meeting will be at St. Louis, where he will talk to the St. Louis Brick Manufacturers' Association on Friday, October 24. Following this he will speak to clay products men at Muskogee, Okla., on October 27. The next point to be covered will be Memphis, Tenn., where he will meet producers on Wednesday, October 29. On the 30th, Mr. Stoddard will address Nashville, Tenn., brick men, and on the 31st he will be in Louisville, Ky., to talk to those manufacturing common brick in that vicinity. November 3 will find Mr. Stoddard at Cincinnati, Ohio, and on the 4th he will address common brick manufacturers at Columbus.

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Some More H. C. of L. Figures

According to a food price comparison issued by the Bureau of Labor Statistics, the expenditures of an average Washington family for food for July were at the rate of \$708.29 per year. The Bureau's figures were based on the July cost of a list of twenty-two staple food articles.

TESTS *to* DETERMINE USES *for* CLAY

Part II Describes Tests By Which It Is Possible to Determine the Uses to Which a Clay May Be Put, or the Characteristics Required in a Raw Material If Certain Classes of Ware Are to Be Manufactured

By R. F. MacMichael

Consolidated Kansas City Smelting & Refining Co., El Paso, Texas

AS THE RESULT of an effort to standardize clay testing for laboratory purposes, the following methods have been worked out. Each of the tests described has been in use for a considerable period of time and will be found to give satisfactory results for the purpose intended.

The forms shown in Figs. 1 and 2 are used to record results. These are printed side by side on a sheet 11 by 17 inches, folding to letter size when completed.

The general physical characteristics of the raw clay are first noted and recorded as indicated on the test sheets. These include color, hardness, fracture, uniformity, organic matter,

foreign material, behavior in crushing, pugging, and forcing thru dies, and remarks of a general nature.

Plasticity is determined by noting the amount of water required to form a slip of standard thickness or viscosity. The clay is blunged, deflocculated to its maximum viscosity with suitable electrolyte, and diluted with water to a standard thickness. The amount of water contained in the slip is determined, which is the measure of plasticity.

HOW VARIOUS TESTS ARE CONDUCTED

If a deflocculating agent, such as hydrochloric acid, is not

NAME An Excellent Terra Cotta Clay
LOCATION

SAMPLE No N21W
TESTED BY DATE

RAW SAMPLE

HARDNESS _____ Hard _____
CLAY OR SHALE _____ Shale _____
FRACTURE _____ Jagged on Sides, Smooth on Faces _____
COLOR _____ Gray _____
UNIFORMITY _____ Good _____
PEBBLES OR SAND _____ No _____
ORGANIC MATTER _____ No _____
REMARKS _____

RAW LUMP BURN

TO _____ OF _____

CRACKED OR SHATTERED _____
DISCOLORED _____ Not Made _____
IRON SPOTS _____
REMARKS _____

PREPARED SAMPLE

ACTION IN CRUSHING _____ Med Hard and Brittle _____ Thru 20 Min.
ACTION IN PUGGING _____ Clean _____
FEEL OF WET CLAY _____ Smooth _____
ACTION IN DIES _____ Good _____
LAMINATIONS DEVELOPED _____ No _____
REMARKS _____

GENERAL REMARKS

Used for Architectural Terra Cotta, Tile, Fence, Face Brick, etc.

PLASTICITY

LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)
100	0
90	0
80	0
70	0
60	0
50	0
40	0
30	0
20	10

WET STRENGTH

1	2.1
2	2.2
3	2.0
4	2.1
5	2.0
6	2.0
7	2.2
8	1.9
9	2.0
10	2.0
11	2.0

WET SIEVE TEST

MINUS 200 MESH _____ 99½ %

COLOR, DRY _____ Light Gray _____
APPROX PROPORTION OF CLAY _____ All Clay _____
CURLED IN DRYING _____ No _____
CRACKED IN DRYING _____ No _____
OIL ON SURFACE OF WATER _____ No _____
GENERAL APPEARANCE _____ Excellent _____

PLUS 200 MESH _____ ½ %

COARSE OR FINE _____ Fine _____
COLOR _____ Gray _____
MATERIAL _____ Sand _____
GOAL DUST, ETC _____ No _____
REMARKS _____

CHEMICAL ANALYSIS

SiO₂ _____
Al₂O₃ _____
Fe₂O₃ _____
CaO _____
MgO _____

Specific Gravity G = 2.6
Strength S = wt

Loss of Weight L = ½
Porosity P = ½

a. Weight of Saturated Sample in Water w_s =
w_t - Bucket and Shot in Pounds f. Factor from "V" Gauge

d. Weight of Wet Sample in Grams
b. Un-dried or Burned Sample
c. Saturated Sample in Air

Dry	1800	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000
G	D	D	L	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D

Figures Not Carried

Fig. 1. Form Used to Record the General Physical Characteristics of Raw Clay

[illegible]

Fig. 2. Form on Which Drying and Burning Tests Are Recorded and which Together With Other Form Is Printed as Described in Text.

used, other adverse agents, which are frequently present, prevent the slip attaining maximum values, and erratic results will be shown. Attempts to determine the plasticity of clay

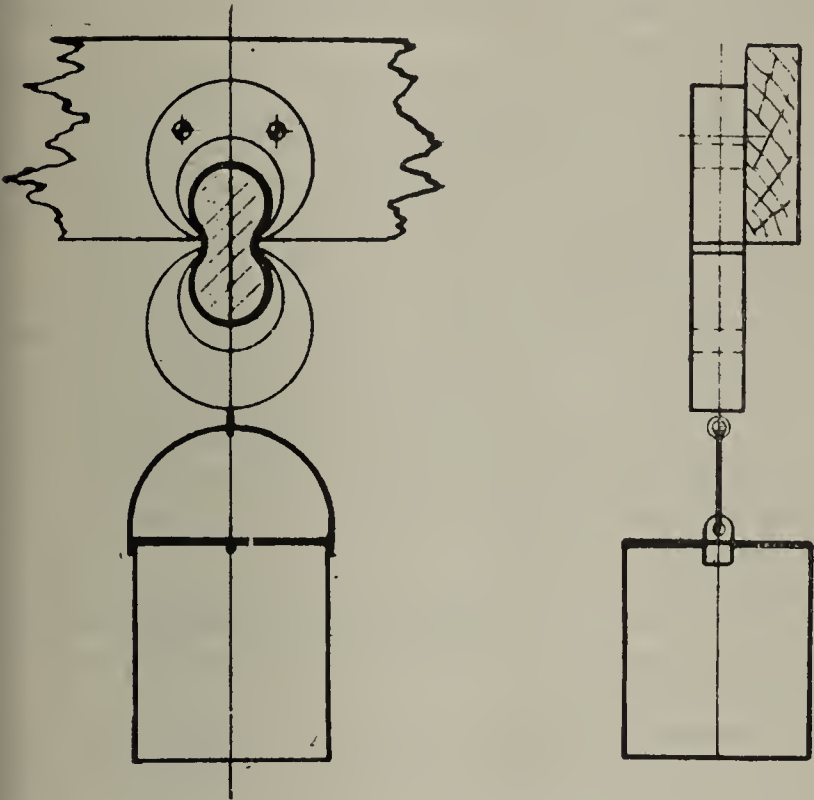


Fig. 4. A Machine for Testing the Breaking Strength of Wet Clay.

on soft mud samples do not give satisfactory results, owing to the large and indeterminate influence of the non-plastic material present.

The standard viscosity for the clay slip is taken as one-tenth of the absolute unit, or one-tenth poise, equal to about ten times the viscosity of water at 20 deg. C. Hydrochloric acid is used for deflocculation. Typical plasticity curves are shown in Fig. 3.

The wet strength of the clay is determined in the breaking machine illustrated in Fig. 4. A sample having a net area of one square inch, similar to the samples used in cement testing, is employed. Sand poured thru a short nozzle three-eighths inch in diameter is used for breaking, the average of several samples being taken. The screw press and die are shown in Fig. 5.

For the separation of coarse material and impurities one hundred grams of clay are blunged into a thin slip and sieved thru a two hundred mesh screen. The plus two hundred mesh material is caught on the screen, removed and dried, and the weight and character noted.

The minus two hundred mesh material passes thru the screen into a half-gallon crock below, and is dried at about 160 deg. Fahr., and the weight and character noted.

Chemical analysis is made in the customary manner and recorded in the space provided.

To test the drying qualities of the sample, one hundred grams of wet clay are pressed into a briquette and dried at 160 deg. Fahr., under standard conditions. A balance and shrinkage gage, as shown in Fig. 6, indicates the loss of weight and the shrinkage simultaneously. These values are noted from time to time on the test sheet, and the drying curve is plotted as shown. If cracking develops during this test, it is noted on the forms. A hundred gram sample is found satisfactory, and in connection with the other information noted, gives an excellent idea of the drying properties of the clay.

MAKING TESTS ON DRIED AND BURNED SAMPLES

For tests on dry and burned material, bars one-half inch in diameter are expressed on to a grooved board and cut into

five-inch lengths, as shown in Fig. 7. The bars are stamped with a sample number and notched with a hundred millimeter gage, as shown in Fig. 8, and the average wet weight is noted.

The samples on the rack are placed in a dryer at 160 deg. Fahr. and dried under standard conditions. Should warping of the ware be likely to occur under ordinary commercial conditions, it will very probably be shown in the test.

Several of the dry sample bars are broken in the testing machine illustrated in Fig. 9. The broken sample, near the point of fracture, is dropped into the "V" gage, shown in Fig. 10, and the factor opposite the center of the bar noted. This factor multiplied by the breaking weight gives the strength of the bar, in transverse rupture in pounds per square inch. This strength corresponds very closely to the actual tensile strength of the clay, and successive tests will be found to check closely.

The burned-strength is later determined in a similar manner, as shown in Fig. 11.

The dry-shrinkage of the clay is measured with a millimeter scale, each millimeter representing one per cent. shrinkage. The dry shrinkage of the bars is slightly greater than that of the sample shown in Fig. 6, but as it seems to correspond more closely with the results obtained in actual commercial work, it is this value which is referred to as dry shrinkage.

About twenty-four samples are placed crosswise in an elec-

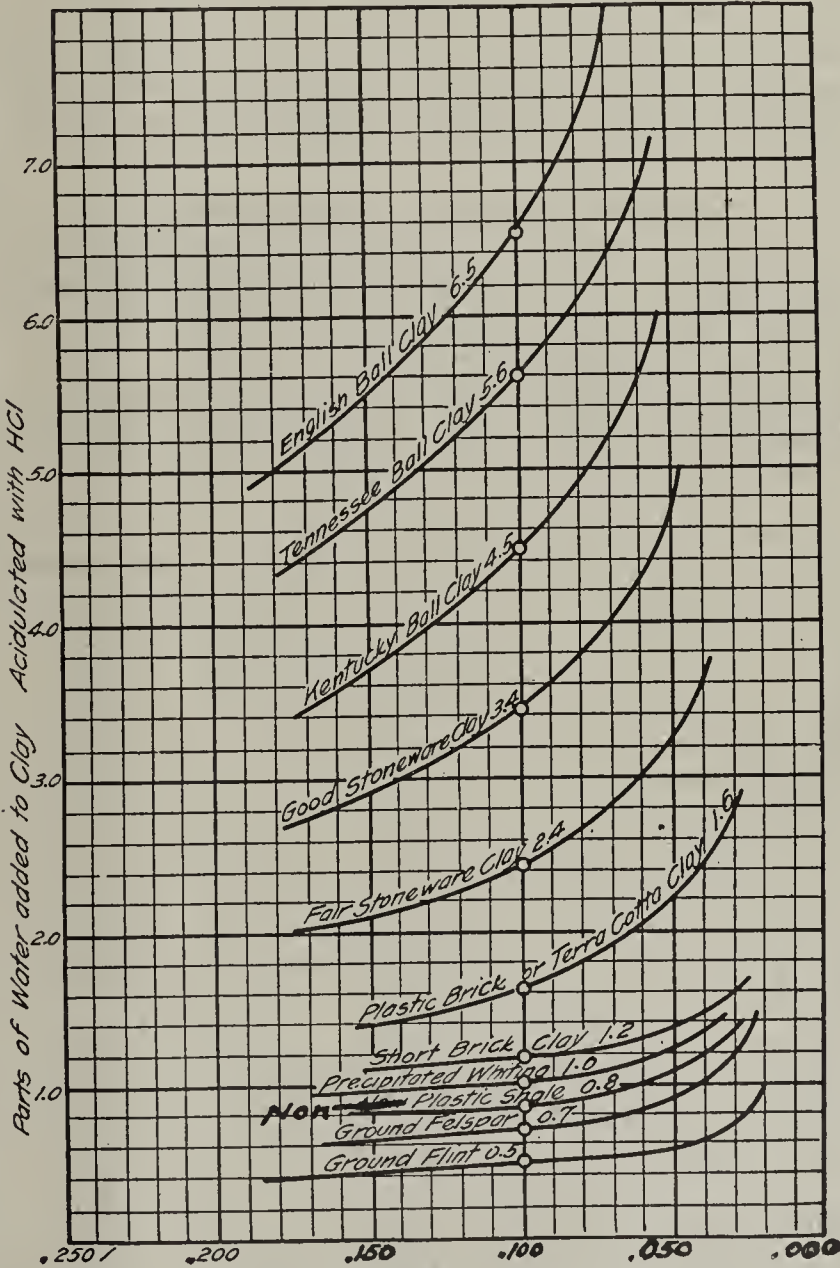


Fig. 3. Typical Plasticity Curves. The Viscosity Is Expressed in Poises.

tric kiln, on supporting bars about 3½ inches on centers. With an oxidizing atmosphere, the temperature is raised at the rate of 100 deg. Fahr. every ten minutes.

Unless special information is desired, the first sample is drawn at 1,000 deg. Fahr. and at each 100 deg. Fahr. thereafter. The samples are drawn with a long steel rod and

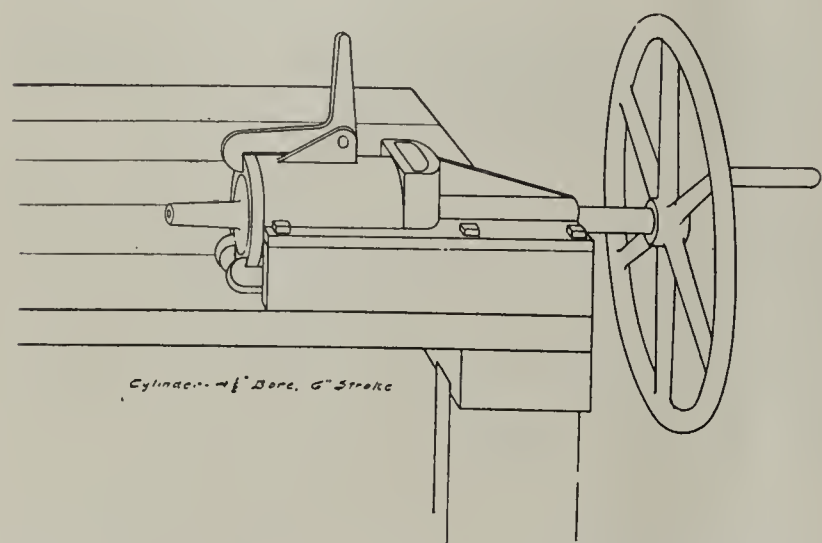


Fig. 5. Screw Press and Die for Making Sample Testing Pieces.

dropped into a pan of asbestos. They will not air-check if the kiln is not allowed to cool before drawing.

While the electric furnace has been found satisfactory for general preliminary work, it is not recommended where great accuracy is desired. In such cases samples should be burned under commercial conditions and the results noted.

When cool, the color, shrinkage, loss of weight, porosity, and specific gravity are determined in the usual manner. The samples are broken, and the strength and texture noted. This information is recorded by curves and figures on the form.

DETERMINING BURNING CHARACTERISTICS

The point at which the sample sags noticeably in the kiln, under its own weight, is designated as the refractory index. A slight softening and stickiness will be noted at from 50 to 100 deg. Fahr. below this point.

The burning range is taken from about the temperature at which the strength reaches a value of 1,500 pounds per square inch, up to the point of bending in the kiln.

This represents the burning range for extreme classes of ware. It is not intended to imply that paving brick, for example, should be burned to a strength of 1,500 pounds, or that refractories should be burned to several thousand pounds per square inch.

Vitrification is represented by a great increase in strength with a decrease in porosity, and the development of a dense, close, more or less glass-like body. The development of these characteristics is clearly indicated on the test sheet, but no attempt is made to fix any particular point as the point of vitrification.

In exceptional cases values as high as the following have been noted in different clays: Plasticity 6.6; wet strength 5.5; dry strength 1,710; burned strength 13,300.

The strength test as an indication of the degree of vitrification, is far more sensitive than any other test known to the writer. A marked change occurs in this property many hundreds of degrees before any other change is noted, with the exception of that of color.

By means of the above tests it is possible to determine the uses to which a clay may be put, or the characteristics required in the raw material if certain classes of ware are to be manufactured.

For convenience in reference, the accompanying table has been prepared, showing the properties required in clay for

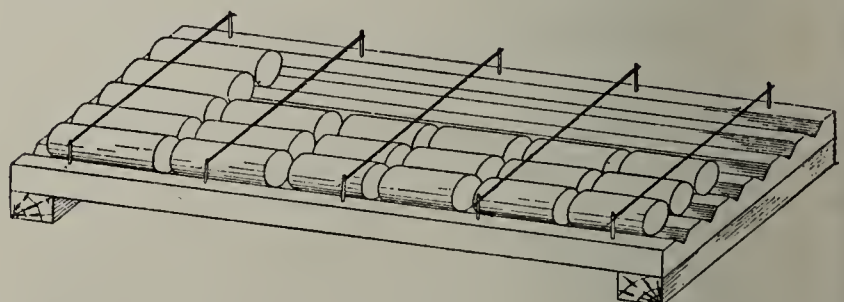


Fig. 7. Clay Bars Are Expressed on to a Grooved Board and Cut With Steel Wire as Indicated In Drawing.

various purposes. This table is the result of tests on clays in actual use for the purpose shown.

The above tests are much more elaborate than are ordinarily required in practice. Under these circumstances, if

PROPERTIES OF CLAYS							
Product	Plasticity	Wet Strength Pounds	Dry Strength Pounds	Burned Strength Pounds	Refractory Index	Porosity Per Cent.	Remarks.
Fire Brick.....	.....	.....	100-250	1,000-2,000	25-30	25-30	Refractory index important.
Fire Clay.....	1.2-3.0	1.0-2.0	100-400	1,000-2,000	25-30	25-30	Plasticity required.
Fire Clay Shapes.....	1.2-3.0	1.0-2.0	100-400	1,000-2,000	25-30	25-30	Plasticity required.
Stoneware	1.5-3.5	1.5-2.5	200-600	2,500-3,500	21-26	15-25	Color important. Usually light. Must take glaze.
Glazed Tile and Faience.....	1.5-3.5	1.5-2.5	200-600	2,500-3,500	21-26	15-25	Color important. Usually light. Must take glaze.
Architectural Terra Cotta....	1.5-2.0	1.4-2.0	200-400	1,500-3,000	21-26	20-25	Color important. Usually light. Must take glaze.
Glazed Brick.....	1.2-3.0	1.0-2.5	100-400	1,500-3,000	21-26	15-25	Color important. Usually light. Must take glaze.
Common Brick.....	1.2-3.0	1.0-2.5	100-400	1,500-3,000	20-26	15-25	Wide range in almost every direction.
Face Brick.....	1.2-3.0	1.0-2.5	100-400	1,500-3,000	20-26	15-25	Wide range in almost every direction.
Paving Brick.....	1.2-2.0	1.2-2.0	100-250	4,000-6,000	20-26	3-6	Strength, toughness and porosity important.
Sewer Pipe.....	1.5-2.0	1.5-2.0	250-400	2,000-3,000	20-26	15-25	Must take salt glaze. Must act well in dies.
Drain Tile.....	1.5-2.0	1.5-2.0	250-400	2,000-3,000	20-26	20-25	Must act well in dies.
Structural Terra Cotta.....	1.5-2.0	1.5-2.0	250-400	2,000-3,000	20-26	20-25	Must act well in dies.
Ball Clay.....	4.5-6.5	2.0-3.5	300-600	5,000-8,000	22-24	.....	Plasticity very high. Burnt color as light as possible.
China Clay.....	1.0-3.5	0.6-2.5	50-500	1,000-5,000	24-30	.....	Color burned must be very light. Should be pure and uniform.

the wet, dry and burned strength fall within the limits given in the table for any particular class of goods, other numerical values will usually be found satisfactory. This reduces both the time of testing and the equipment required for practical operation.

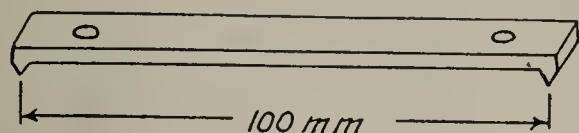


Fig. 8. Hundred Millimeter Gage Which Is Used to Notch the Wet Clay Samples With.

For convenience in the systematic testing, the following directions have been prepared:

DIRECTIONS FOR CLAY TESTING

1. A raw sample of about ten pounds weight is required.
2. Note characteristics as indicated on form under raw sample.
3. Dry and place in two gallon jar.
4. Crush six pounds, dry weight.
5. Grind thru 20 mesh screen for plastic clays and 40

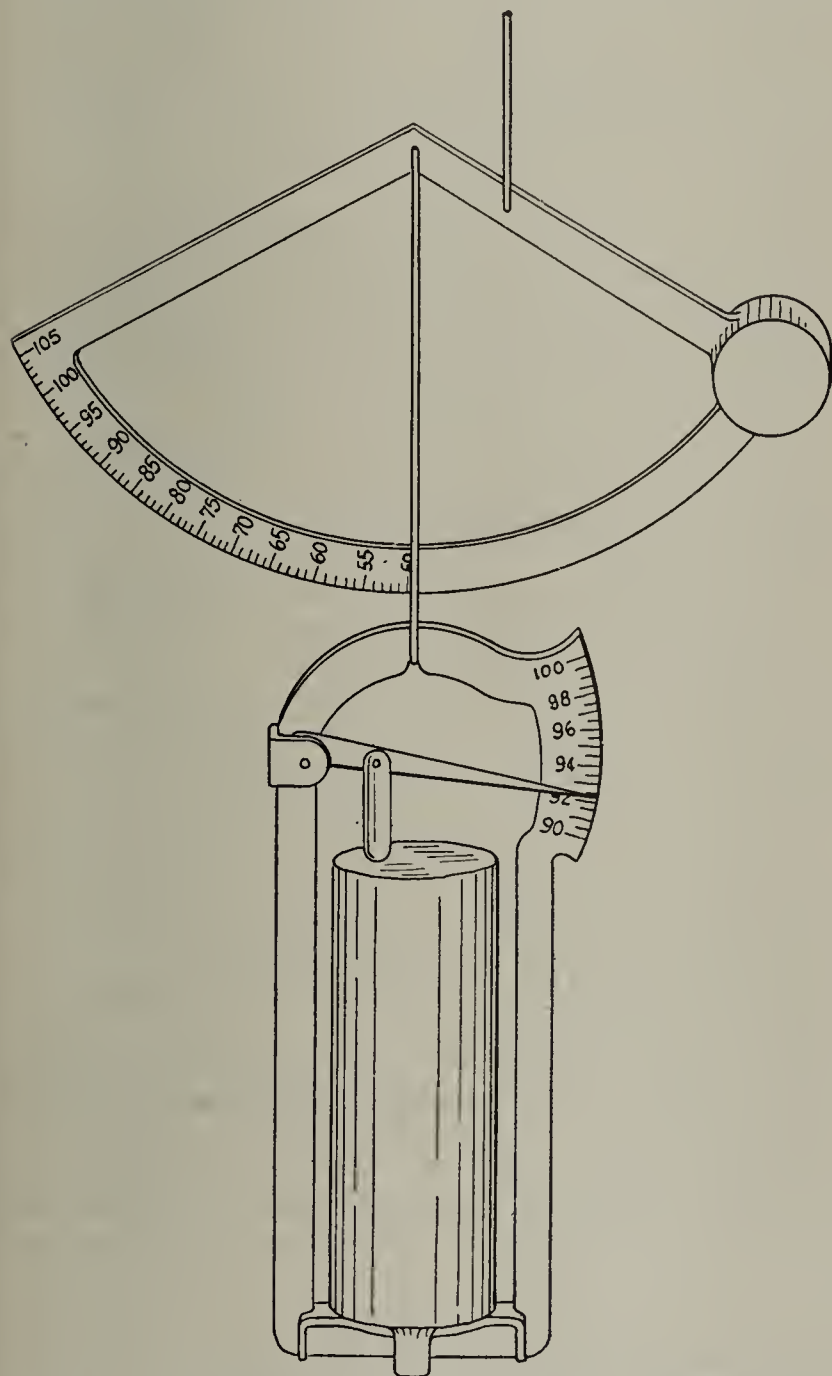


Fig. 6. An Apparatus Which Indicates the Loss in Weight and Shrinkage Simultaneously.

mesh screen for shales. For non-plastic clays grind to 100 mesh and use gum tragacanth or other similar binding agent.

6. Note how clay acted in crushing and drying.
7. Place in wet pan and mix thoroly while dry to insure uniformity.

8. Remove 800 grams for wet-sieve and plasticity tests.
9. Pug sample remaining in wet pan to proper consistency.
10. Note how the clay acted in pugging.

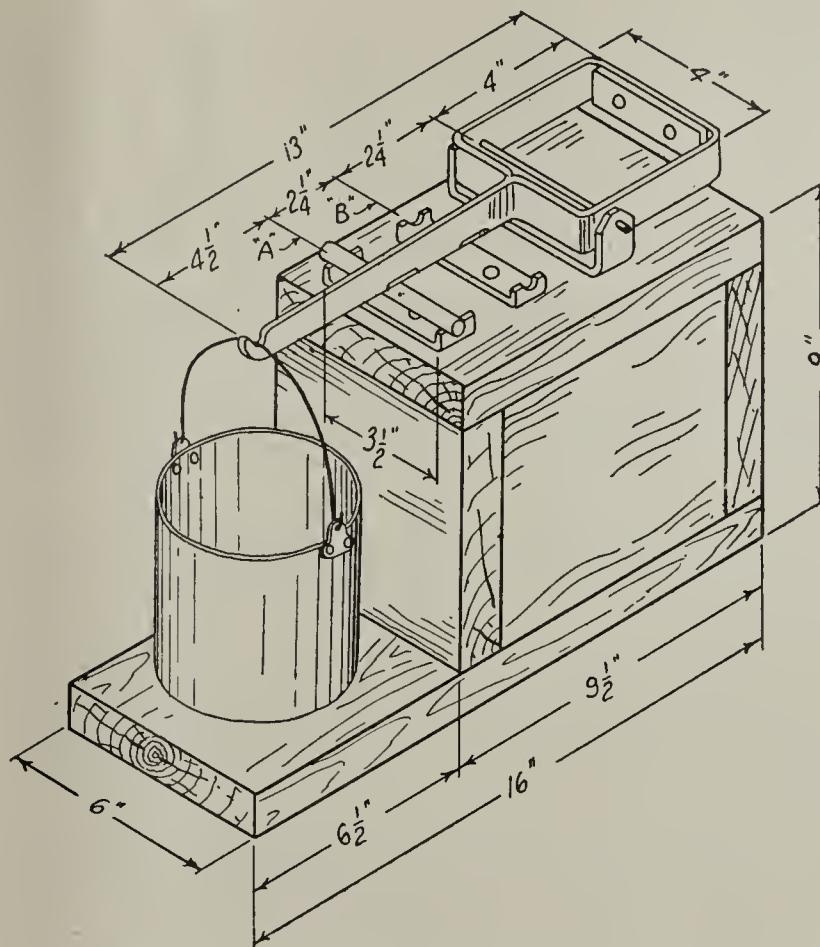


Fig. 9. Testing Machine Used for Determining the Breaking Strength of Dried Clay Bars.

11. Hard clays and shales should be aged 24 hours. Soft clays usually require no aging.

12. To measure plasticity:

a. Place 400 grams of water in an electric blunger—the familiar soda fountain egg-beater is excellent. Add ground clay as per table to form an aliquot part. A short clay will require about a one part mixture. A good ball clay will take a four to six part mixture. Blunge until thoroly dissolved—from 5 to 60 minutes.

b. Determine viscosity in poises, and mark point on extreme right hand line of squared paper. Add one drop of commercial hydrochloric acid to slip in cup, stirring with plunger while running. Note viscosity, and record on line to left of last point noted. Repeat operation until a maximum value is reached and the curve is flat. Transfer this point to proper column under number of parts of water used.

c. Dilute with water as per table and note viscosity for one or more additional points. Plot curve. The number of parts of water producing a viscosity of 1/10 poise is the index of the plasticity of the clay.

Example: To make about 400 cc of a three part mixture: to 400 g of water add 133.3 g of dry material. To dilute this three part mixture to a four part mixture: To 400 g of mixture, add 100 g water. To dilute a four part mixture to a 5 part mixture: To 400 g of mixture, add 80 g of water.

13. Record numerical value of plasticity in proper place on form.

14. For wet sieve test place 100 grams of dry ground clay in about 300 cc. of water in blunger. Stir until thoroly dissolved. (Put water in first.)

15. When thoroly dissolved, pour contents of bottle on to the 200 mesh screen in the wet sieve machine, using plenty of water to wash out the bottle. Plus 200 mesh material is caught on the screen. Minus 200 material passes thru into the one-half gallon milk crock below.

FOR DILUTING CONTENTS OF MIXTURE

Weight of		Parts of Water to One Part of Dry Material								
Mixture	1	2	3	4	5	6	7	8	9	10
100	50	33.3	25	20	16.7	14.3	12.5	11.1	10	9.1
200	100	66.7	50	40	33.3	28.6	25	22.2	20	18.2
300	150	100	75	60	50	42.8	37.5	33.3	30	27.3
400	200	133.3	100	80	66.7	57.1	50	44.4	40	36.4
500	250	166.7	125	100	83.3	71.4	62.5	55.5	50	45.5
600	300	200	150	120	100	85.7	75	66.6	60	54.6

16. Wash the material remaining on the screen into a bowl under a small stream of water from the faucet. This plus 200 material should consist of fine sand, mica, etc., without clay particles, which can be crushed between the fingers. Water running off should be clear. Place in the dryer.

17. Place the minus 200 material in the dryer.

18. If the clay has been aged, re-pug to proper consistency.

19. Work by hand into solid mass and place in a cylinder press.

20. Attach figure 8 die, and run out a 12 or 14 inch length of clay. Die should be clean and bright inside and wet before using. Cut into one inch lengths with gang cutter.

21. Make wet strength test on ten samples, taking the weight of the bucket, sand, clamp and lower half of the sample in pounds. Recover clean samples which remain in the upper clamp, wasting the sanded samples which falls into the bucket. Record weights on form.

22. Attach $\frac{1}{2}$ inch die and fill one V-rack with samples.

23. With wire cutter, notch one-half inch samples about one-fourth way thru with a sliding stroke, in front of each pair of guide posts, making 32 samples one-half inch by five inches. The samples should lie straight and true in the bottom of the grooves.

24. Remove one string of four samples and weigh, recording average weight of one sample as wet weight "A" on the form. Surplus clay should be removed from ends of string before weighing.

25. Note color of wet clay.

26. Note how clay acted in the die.

27. Mark sample number with stencil about $1\frac{1}{2}$ in. from left end of samples.

28. Loosen samples slightly with fingers to prevent sticking.

29. Notch samples lightly with 100 mm. gauge.

30. Place rack and samples in dryer.

31. Press 100 grams of wet clay in a briquette mold. Stamp the sample number on briquette.

32. Place briquette in test dryer. Thermometer should stand at 150 deg. Fahr. and clock at 12M. Record loss of weight and shrinkage every ten minutes, plotting curve on form.

33. When 5 in. samples are thoroly dry, remove from dryer on rack.

34. Note if the samples have been warped in the dryer.

35. Break the samples carefully at 5 in. notches. Only the straightest and most perfect should be put in the kiln, others being reserved for dry-strength test.

36. Place 27 samples in an electric kiln on supporting racks. Samples should not touch sides or bottoms of kiln. Place numbered end to left side of kiln.

37. Burn kiln slowly at first, until samples are thoroly heated thru; afterwards at the rate of 100 deg. rise each ten minutes.

38. Extremely fine grain clays may pop in kiln. In this case, they must be heated very slowly until red heat is reached.

39. When 1000 deg. Fahr. is reached, remove one sample and drop into a panful of asbestos. At each succeeding 100 deg. draw an additional sample. Mark samples on right end when cool with lead pencil, and place on rack with the dry samples.

40. When the bars in the kiln soften and stick slightly, the burn is nearly completed. When bars bend under their own weight the burn is complete, and the power is shut off.

41. Record length in mm. of each sample, including dry bars plotting curve direct.

42. Record color of dry and burned samples.

43. Record dry or burned weight of samples under "b" on form.

44. Soak burned samples in water five or six hours, nearly submerged.

45. Weigh samples submerged in water and record as "d."

46. Roll sample on dry towel to remove surplus water.

47. Weigh in air and record as "c."

48. Break dry and burned samples in the bar machine, and weigh the bucket and shot. Record as "w." The average of several dry bars should be taken.

49. Place broken bar in "V" gage and read factor opposite the center of bar. Record as "f."

50. Note amount and point at which black coring disappears, if present at all.

51. Note texture of break in burned samples.

52. Note if lamination or piping has been produced in die as shown by broken sample.

53. When water is entirely evaporated, remove bowl from dryer. Note cracking, curling, etc., as indicated on form.

54. Note character and weight of plus 200 and record as indicated on form.

55. Make necessary calculations from above data and plot curves for length, weight, porosity, specific gravity,

FOR MIXING DRY MATERIALS TO BE ADDED TO WATER

Weight		Parts of Water to One Part of Dry Material								
of Water	1	2	3	4	5	6	7	8	9	10
100	100	50	33.3	25	20	16.7	14.3	12.5	11.1	10
200	200	100	66.7	50	40	33.3	28.6	25	22.2	20
300	300	150	100	75	60	50	42.8	37.5	33.3	30
400	400	200	133.3	100	80	66.7	57.1	50	44.4	40
500	500	250	166.7	125	100	83.3	71.4	62.5	55.5	50
600	600	300	200	150	120	100	85.7	75	66.6	60

strength, etc. Record miscellaneous data as indicated on form.

56. If chemical analysis is determined, record on form.

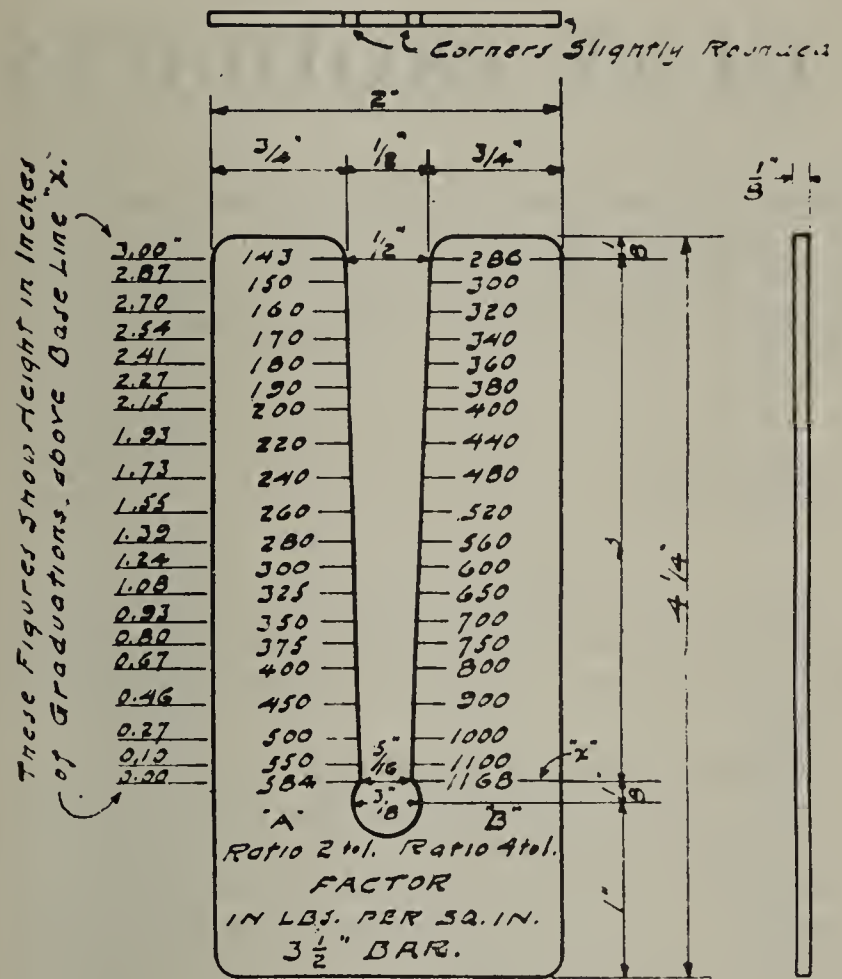


Fig. 10. "V" Gage Used to Determine Factor by Which to Multiply Breaking Weight to Find Strength of Bar. Made of Polished Tool Steel Not Hardened.

57. Note burning range from temperature at which 1,500 pounds strength is developed up to bending point.

58. The temperature at which bending occurs is recorded as the refractory index.

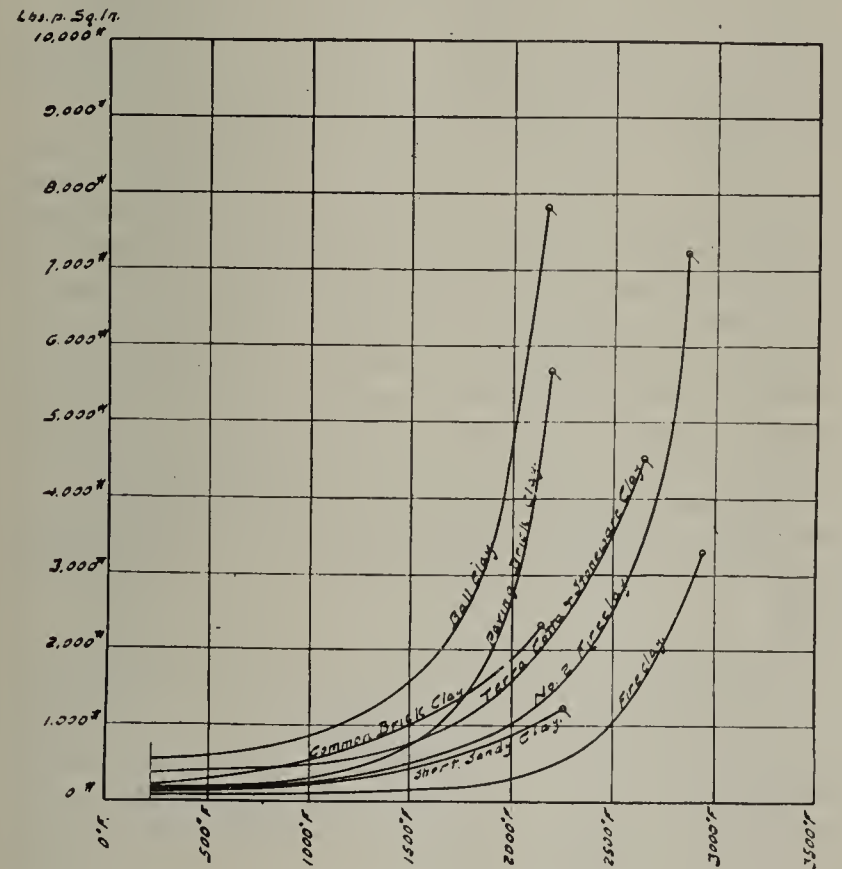


Fig. 11. Typical Burned Strength Curves for Various Classes of Clay Products.

59. Place samples and record in permanent file for future reference.

For the control of slip and glazes in factories making glazed ware, the following method will be found to give excellent results.

1. Prepare materials heavier than is required for actual use.
2. Reduce specific gravity to proper point by adding water.
3. Test viscosity.
4. If too thin add hydrochloric acid, or ammonium chloride.
5. If too thick add sodium carbonate or magnesium sulphate.

Satisfactory values in a plant using compressed air for spraying were found to be:

	Sp. Gr.	Viscosity
Slip	1.80	.160 Poise
Glaze	2.20	.120 Poise

Tests similar to the above are applicable to casting slips and other work of the same general nature. Other chemicals than those noted are frequently used for the purpose indicated. Temperature is usually of little importance in this work, and generally is not noted if nearly normal.

Specific gravity is determined by completely filling a glass-stoppered bottle, inserting the stopper, and washing the surplus material from the sides. The bottle is weighed and the ordinary calculations employed. When these have been once made, only the total weight of the filled bottle need be noted on subsequent tests.

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Exports of Ceramic Products

From figures now available, the exports of fire brick and certain other ceramic products from the Port of New York, for the month of July, show some interesting totals. The three items covered, fire brick, chinaware and earthenware, aggregate \$32,514, \$14,355 and \$44,743, respectively, with distribution to important points as follows:

Fire Brick: Mexico, \$5,044; Cuba, \$6,148; San Domingo, \$3,315; Philippine Islands, \$3,300; Dutch East Indies, \$1,445; and Panama, \$653. The balance covers small shipments to such points as Trinidad, Chili, China and various South American points.

Chinaware: England, \$4,137; Philippine Islands, \$1,113; Cuba, \$2,194; Mexico, \$716; Panama, \$643; Argentine Republic, \$885. The remainder of the gross amount covers small shipments to such destinations as Italy, Newfoundland, Dutch West Indies, Colombia, Peru and other South America countries.

Earthenware: Belgium, \$13,610; France, \$1,000; Panama, \$11,885; Mexico, \$2,765; Cuba, \$2,335; China, \$3,641; England, \$1,593; Philippine Islands, \$1,028; and smaller shipments, making up the gross total noted, to Greece, Italy, Jamaica, Australia and various South American points.

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Terra Cotta Firm After Export Trade

The Atlantic Terra Cotta Co., New York, operating plants at Perth Amboy, N. J., and other points, is continuing the production of fire brick at its works, as prevailing thruout the war period, including standard size and shapes. Arrangements have been made to handle export orders for this material, and prominence will be given to this department of operation.

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"Enthusiasm is a magnet that draws the listener close to you and your ideas."

ENTRENCHING COLLECTIVE TRADE-MARKS *for* CLAY PRODUCTS

A "Commercial Autograph" Once Acquired is Supposed to Stand Forever—Every Precaution is Being Taken to Have Any Trade-Marks Adopted by Associations in the Industry Bomb-Proof

By Waldon Fawcett

IT IS A VERY REAL PROBLEM, these days, the responsibility for invoking all the protection that is available for the new collective or cooperative trade-marks of the clay products field. Leaders in the trade and association executives are frankly stumped in many instances by the puzzles presented and are writing to official quarters in Washington for advice and first aid. Rightly enough too, because a "commercial autograph" once acquired is supposed to stand for time and eternity and naturally it is desirable that such a business badge be made as nearly bomb-proof as possible.

Two complications befog the situation that has developed since the trade associations in the clay products industry have suddenly been seized with a desire for blanket or composite trade-marks—a natural sequel, by the by, of the cooperative advertising campaigns that promise so much for the future of the industry. One of these perplexities is due to the fact that some of the groups in this field of team-play have a fondness for slogans instead of for more conventional forms of trade-marks and their officers are in the dark, apparently, as to just how far they can go in protecting or monopolizing the slogans that they have created. The other angle of uncertainty is due to the fact of the joint ownership in these new vehicles of identification.

This last aspect of the situation has already been responsible for some keen disappointments in trade quarters and it were best if certain existing limitations be borne clearly in mind if other "alliances" in the industry are not to have plans rudely upset on the eve of a united drive in advertising and selling. It has come as a rude shock to some of the experienced men in the industry that there could be any objection to the symbols that have been selected at the round robins of the trade. Most of these men have had in the past a certain amount of personal experience in trade-marking. They have realized, all along, that it is desirable to have every trade-mark vouched for by Uncle Sam, thru registration at the United States patent office at Washington but so long as a mark did not embody a geographical name or transgress other well-known rules they were wont to assume that any candidate would be approved as a matter of course at the United States Trade-Mark Division.

What has been, then, the surprise and disillusionment of some of these field marshals of the allied forces in the clay products industry to be "held up" at Washington when they applied for a Federal "O. K." on watchwords for the new campaigns. This rude interruption to some of the best laid plans has come about not because of any physical shortcomings in the cooperative marks—the latter are not deceptive or otherwise faulty—but simply because many men

in the trade have entirely overlooked a little "joker" in our national trade-mark laws and regulations that bids fair to prove a grim joker for the clay products industry at this juncture.

CANNOT REGISTER COLLECTIVE TRADE-MARKS

This stumbling block operates to deny Federal recognition to collective or community trade-marks, so-called. In the opinion of many persons who have given much thought to the subject it is an absurd discrimination. Most foreign nations indulge in no such whim and indeed, the U. S. Bureau of Foreign and Domestic Commerce not long ago prepared for introduction in Congress a Bill that would let down the bars at the Patent Office to collective marks. But, for the time being, all this is neither here nor there. The bald fact stares us in the face that the "No Admission" sign confronts the cooperative trade-mark at the United States Patent Office and inasmuch as the clay products associations are bent on driving ahead with their sales and promotion campaigns they must take the conditions as they find them.

Lest there be a misunderstanding of the exact situation it may be pointed out that the trade-mark statute does not specifically exclude the collective trade-mark, as it does, for example, the trade-mark that embodies public insignia. But it fails to make provision for the registration of such marks, which is just as serious for brick men, inasmuch as the Patent Office officials will not give the countersign to marks that they are not definitely empowered to receive. This situation did not attract attention until a few years ago when the Chamber of Commerce at Brockton, Mass., sought to register a community mark to be placed on boots and shoes made by members of the organization and which would indicate that the goods were made in Brockton. Altho the case was appealed, after the initial refusal, the tribunals at the Patent Office insisted that there was no authority for registering what are known as collective trade-marks.

The nub of the matter is that Uncle Sam's trade-mark arbiters hold (and they have been backed up by the courts), that an association—even the association which is duly incorporated—if neither a manufacturer nor a trader actually engaged in commerce, cannot be the owner of a trade-mark. The authorities insist, in other words, that unless a trade association is engaged in commercial pursuits of some kind, title to a trade-mark cannot be acquired. This is rough, certainly, in the practice of cooperative trade-marking wherein the marks do not point to any particular manufacturer as the source of the goods but instead indicate that each manufacturer using the mark is a member of an as-

sociation and indicate in addition, possibly, that the goods under the common mark are of a certain geographical origin or have a certain uniformity or harmony of material, quality or process of manufacture.

GETTING AROUND THE SITUATION

What is to be done about it? This is the question that confronts the organized clay products industry when brought face to face with the disconcerting situation. Two courses and only two appear to be open. Producers banded together under a common commercial flag can elect to give up all thought of registration and to rely merely on the common law for the protection of their joint mark. Nor is this by any means a poor make-shift. If an association has ample proof that it was the originator and first user of a given mark it can count confidently that the courts will grant redress against any imitator or infringer or against any interest that undertakes to use the mark without authority with the consequence that unfair competition ensues.

As an alternative for thus boldly sailing the trade seas without any trade-mark credentials from Uncle Sam we have the plan whereby a trade association takes title to all goods marketed under its brand as a means of attesting in status as a bona-fide trader. Recourse to such an expedient does not mean that a trade association has to actually handle the wares. Shipments can be made direct from the plants with the association headquarters serving as a sales office. But if the association can satisfy the officials at Washington, as many in other lines of trade have done, that it has the temporary ownership of the ordinary trader in the commodities it brands, there is every likelihood that a trade-mark certificate will be forthcoming. There is nothing in the trade-mark laws to prevent an association from registering a trade-mark because it is an association and not a firm or individual. On the contrary there is express authority for letting associations in on the protection afforded by the trade-

mark law, but the association must own the goods it stamps with its mark.

PROTECTING AN ADVERTISED SLOGAN

In connection with the latter-day activities of the American Face Brick Association and some of the other trade bodies the question that seems to be bothering is that of how to protect a nationally-advertised slogan. Most of the brick men who are exercised over this problem seem to have started out on the assumption that, of course, a slogan cannot be trade-marked. That is where they are wrong. A slogan, provided that it is not descriptive and has a trade-mark use, can be registered as a trade-mark just as readily as a symbol such, say, as that which the Common Brick Manufacturers' Association of America has evolved from the initials of its name.

This does not go back, please remember, on anything that has been said regarding the eligibility of trade associations. A trade organization cannot get a certificate at Washington for a slogan any more than it can for any other kind of a trade-mark unless it can qualify as a sure-enough "trader," with trader's ownership of goods. If that bridge has been safely crossed, there remains for the sake of slogan acceptability only the stipulation that the slogan shall have a really-and-truly trade-mark use; that is to say, it must be used on the goods or on wrapping or containers that enclose the wares. This exaction also may come as a jolt to some of the brick men who have been thinking in terms of slogans, because the tendency is to think of a sales slogan or association motto as something for use in advertising literature, on stationery, etc. The cold fact is tho, that if the slogan is to be monopolized in connection with the class of goods with which it is associated it must present not merely "absent treatment" but must be in personal attendance so to speak upon the goods as they pass down the line to the ultimate consumers.



GENERAL PRICE ADVANCE MOVEMENT in NEW YORK CONSTRUCTION MARKET

HEAVY SPOT BUYING of building materials accompanied by the promised settlement of the bricklayers' difference with their employers pending arbitration of wage demands brought about one of the most general price advance movements that the New York construction market has developed in half a year, says the Dow Service daily building reports of October 6.

Present indications point to an actual start in the long deferred construction era that has been awaited with general discouragement by the building and material interests of the eastern section of the country since the first of the year. The strongest indication that the change is positive and not figurative is the behavior of building material prices, indicating actual buying, and a survey of the various departments proves that materials and commodities are moving up in price in spot and future buying because the factor of over-demand and under-supply is actually beginning to function. In common brick, window glass and lath actual stampede conditions have developed in varying degrees.

DRYER PLANTS TO OPERATE ALL WINTER

In common brick it has reached a stage where for the first time in several generations dryer plants along the Hud-

son River will operate all winter unless a protracted spell of zero weather sets in so as to have at least a little better supply of brick for this market's use next spring, thereby keeping the cost of this material down as low as possible.

A passing sidelight upon the steel strike as it effects building construction was revealed when one of the best informed men in the fabricated steel department said that the plate mills have been aggressively in the market for orders to keep the fullest possible capacity of their plants employed at the present time.

In the lumber department interest centered around the fact that spruce lath today is bringing \$10 a thousand and the dealers are not anxious for business as the demand is acute. Possible relief from the soaring tendency of lumber developed in House Bill 9567, introduced October 4 and referred to the committee on the Judiciary prohibiting the exporting of lumber from the United States for a period of two years from the passage of the act. Penalties are limited to the value of the lumber exported. The author of the bills hopes to check the heavy foreign demands upon American lumber resources which has resulted from the lumber embargoes placed by Canada just after the Armistice was signed and which embargo is largely responsible for the high price of

spruce lath here now. Lath wholesalers are getting \$8.50 a thousand for this material.

STAMPEDE IN COMMON BRICK MARKET

Hudson common brick is strong at \$16 a thousand, wholesale, with the usual additional charge of handling and cartage with a 15 per cent. charge to cover overhead and expenses of the dealer instead of the 10 per cent. charge heretofore made. This reflects wage advance to truck drivers, etc. which the dealers have been making from time to time but have been absorbing pending the actual resumption of building activity. As a matter of fact at the week end offers were made as high as \$18 a thousand wholesale for Hudson brick, but the manufacturers are trying to keep the price down to \$16 altho a definite stampede for priority of delivery and available stocks is already an actuality.

This drift may be better gauged when it is shown that 12,000,000 brick or 31 barges came into the city last week, or 2,000,000 more than in any week since spring, and yet the market was almost bare Saturday. Last year's brick is now gone and new brick is beginning to arrive whereas it appeared only two weeks ago as if the 1919 brick would not begin to come in before the opening of navigation next year. The situation regarding the potential demand for brick and the available supply is already becoming acute. Manufacturers are using more energy to rushing production at their yards than to loading barges for shipment of brick to this market. If weather conditions are favorable to brick manufacture during the next few weeks there will be an increasing shortage of brick for distribution here. Rainy days will permit loading.

In the window and plate glass departments the supply is far below the demand and it is said that there can be no adjustment of the rate of production until after December 8th when the present agreement with the men expires. This means that there can be no lowering of prices and presages possible price advances after the turn of the year. Even tho the demand is increasingly heavy the manufacturers are unable to get sufficient box cars to move the material actually under order. Current market discounts are merely nominal, actual quotations depending upon the stocks various jobbers have which, at best, are decidedly ragged, with the advantage in favor of New York City buyers at the present time. The automobile trade still demands the lion's share of the available supply of plate glass, but when construction gains momentum as it has within the last fortnight there is sure to be vigorous competition for material with resultant premiums. The demand for window glass was under normal between January and July. Since July the gain has been increasingly sharp, reaching its most acute angle within the last two months with last week's demand represented by almost a perpendicular line.

PRICES MOVE UPWARD

All basic building material prices moved upward last week. Prices current showing the actual quotations ruling October 6 follows:

Asphaltum (per ton N. Y. oil blown) to road contractors tank cars per ton, \$13 to \$15. Hudson common brick, wholesale, dock, N. Y. \$16 per thousand, with delivered prices plus handling, cartage and 15 per cent. Portland cement, delivered, per barrel \$3.40, with rebate on empty bags 15 cents, 4 bags to barrel; polished plate glass from official plate glass list of August 1, 1919, sizes up to 5 sq. ft., 78 per cent. over 5 sq. ft. 78 per cent.; window glass, all sizes single A. & B. quality, 77 per cent.; A-double, 79 per cent.; B-double 81 per cent. off jobbers list March 1, 1913. These discounts are generally acceptable in the East and Middle West, but are likely to be somewhat modified in New York

owing to condition of demand and incomplete stocks. Gravel remains at \$2.75 on both $\frac{3}{4}$ and $1\frac{1}{2}$ -in. sizes, delivered Manhattan and Bronx, Brooklyn may be higher. Hollow brick remains at \$15 per thousand wholesale.

Plaster prices have been advanced. Delivered quotations job site, Manhattan Bronx, Brooklyn and Queens.

Neat wall (in cloth bags) per ton, \$22.30; lath mortar (cloth bags) per ton, \$16. Brown mortar (cloth bags) per ton, \$16; finishing plaster (cloth bags) per ton \$25. Rebate on bags 15 cents each. Finishing plaster 250 lb. barrels, \$3.80; 300-lb. barrel \$4.75. Plaster blocks 2-in. hollow per sq. ft. 9 cents; 2-in. solid, 12 cents; 3-in. hollow 12 cents; 3-in. solid 15 cents; 4-in. hollow, 13 cents; 5-in. hollow, $14\frac{3}{4}$ cents; 6-in. hollow, 18 cents; 8-in. hollow, $22\frac{1}{2}$ cents. Plaster boards delivered Manhattan, Bronx, Brooklyn $27\frac{1}{2} \times 48 \times \frac{1}{2}$ -in. each, 32 cents; $32 \times 36 \times \frac{1}{4}$ -in. 23 cents; $32 \times 36 \times \frac{3}{8}$ -in. 24 cents; $32 \times 36 \times \frac{1}{2}$ -in. 26 cents.

Lime quotations, delivered, Manhattan, Bronx, Brooklyn & Queens: Finishing lime, standard 300-lb. barrel, per barrel, \$3.70; Common lime, standard 300 barrel, \$3.50; Hydrate finishing lime (cloth bags) per ton, \$24.60; (rebate for bags 20 cents each) Hydrate finishing lime (pound paper bags) per ton, \$24.60; Common hydrate lime in (cloth bags) per ton, \$20.60; Common hydrate lime (in cloth bags) per ton \$22.50. Rebate on bags 20 cents each. Common lime hydrate (in paper bags) per ton \$18.50.

Probably the only item in the building material market that will show a decline in price today will be linseed oil, an important component of paint which had declined to \$1.92 a gallon per gallon. ($7\frac{1}{2}$ lbs.) at the week end for 5 barrel lots; \$1.89 for more than 5 gallon lots and \$2 for Calcutta.



American Paving Brick Receiving Recognition Abroad

Opportunity for distribution of American paving brick in foreign countries, probably in connection with rebuilding of war-devastated sections, and also probably as a permanent trade proposition, is revealed in the receipt of a letter from London at the headquarters of the National Paving Brick Manufacturers Association, Cleveland, Ohio, during the past fortnight. The communication explains the opportunity for opening up of the American paving brick industry in the London markets. One feature that makes it apparent is that early standardization of freight rates be obtained, in order that American manufacturers or distributors may be certain in quoting prices abroad as inquiry almost invariably refers to the question of price.

"We are gratified that the American paving brick is receiving recognition from abroad," says Will P. Blair, vice-president of the National Paving Brick Manufacturers Association. "By reason of inquiries from foreign countries to this office, it is certain that a foreign market of great importance to the industry can be developed in the next few years—this providing regulatory freight rates and guarantees of shipping facilities be established to various ports thruout the world. If industrial lines are to be augmented in this direction, paving brick or any other line alone is not to be considered. Many small and large articles could get a foot-hold in foreign markets, if the combined rail and ocean freight rates could be ascertained so that the price of goods delivered could be given in answer to foreign inquiries. How long we are to remain at the mercy of foreign countries as far as foreign trade is concerned depends largely upon how soon national legislators are made to realize what these lost opportunities mean to the entire country."

A CONTRACTOR'S METHOD of CONTRACTING COSTS

In This Article the Author Shows That the Method of Handling Costs Which He Has Outlined in Previous Articles in "Brick and Clay Record" Is Really Equivalent to the System Which Any Successful Contractor Must Employ

By G. W. Greenwood

Treasurer, United Refractories Co., Uniontown, Pa.

MR. BARNES," said the G. M. as he walked into the office of the auditor, carrying a sheet of paper with him, "I have just been taking a leaf out of a contractor's book. I am thinking it bears on the little discussion we were having on the subject of costs a few weeks ago."

"Just a moment," responded Barnes, deftly plugging the keys of a calculating machine and printing a total. He compared this with several other totals and heaved a sigh of relief.

"I couldn't have rested until I was sure my figures tied up" he explained reaching for the sheet of paper which the G. M. held in his hand.

On the paper were the following statements with three columns of figures:

	X	Y	Z
2,728 cu. yds. excavation.....	1.10	1.20	1.15
13,280 sq. yds. plain concrete pavement	2.49	2.45	2.55
29 cu. yds., class B concrete	15.00	12.00	13.00
190 lin. ft. 12-inch concrete pipe	2.25	2.75	2.00
34 lin. ft. 15-inch concrete pipe	2.65	3.25	2.50
500 lin. ft. stone underdrain..	.40	.90	.50
2,200 lin. ft. wire cable railing	.60	.75	.75
Totals	\$38,540.60	\$38,890.60	\$39,743.20

"I can't say I know what it is all about," said Barnes, "but it is apparently made up like a piece price quotation on several special shapes, with the gross total of the bids set down at the bottom."

"To me it appears to be more far reaching than that," asserted the G. M. "Suppose instead of quoting a certain price per thousand, it was necessary for Mr. Baldwin to set down in his quotation the price for each operation, molding, setting, firing, drawing, and so forth, each including its proportionate share of overhead—"

"Right there you would see the end of your trouble, and the front end at that. Did you ever read an article on accounting that didn't begin to side step as soon as the author reached the question of distributing overhead among the different departments? I didn't."

"Well, anyway, it would have to be hidden away in the figures somewhere. But suppose he had to set all this down, draw a line and submit the whole to the purchaser. And suppose all other bidders had to do the same. And suppose all the results of all the bidders were then made public and spread broadcast over the country by bonding companies. How would it strike you?"

"It would be not only revolutionary, but evolutionary," said Barnes, absentmindedly picking up Miss Lane's pencil, "A lot of us would soon know more about our costs than we know now. When does the new era begin?"

PREDICTING COST AND BASING SELLING PRICE

"I do not anticipate anything so startling during our lifetimes in the brick industry. But in the light of our previous discussions, it seems to me we can secure much encouragement from their example. For instance, each contractor sits down and figures out, in advance, just what each process ought to cost. To this he adds what should be a legitimate profit. Suppose he secures the contract. What is his next move? I take it that his predicted costs are what you would consider his standard costs, similar to the standards you propose for molding, setting, etc. If his actual costs are greater than his predicted standards, his standard profit on this particular operation is reduced; it may be turned into a loss. If his actual costs in some cases are lower than his predicted standards, he is that much ahead on this operation. Now how, in your opinion, should he tackle the question from an accounting standpoint?"

"I would think this," seemingly intent on his self-imposed task of demolishing Miss Lane's pencil, "I would in his case keep careful track of all expenditures, charging them up to the proper departments. When each part would be fully completed, and had passed inspection, I would compare the total charge with the initial prophecy, and find the difference either profit or loss. As a result, it might be possible to bid lower on this item next time, or it might be necessary to bid higher. And the algebraic total of all these at the close of the transaction would be the net difference between actual and standard costs."

"In doing all this, it seems to me, Mr. Barnes, that the far seeing contractor is simply following out the lines laid down by you some time ago. He first predicts his costs; these constitute his standards, and on these he bases his selling price. Next, he sets up his actual costs in the same form, indicating in dollars—and sense—any differences between standard and actual costs. He is in a position to account promptly for any difference of any consequence. So far as practicable, he checks the progress made each day against the corresponding standard cost. Suppose he finds when he has half completed some work estimated to cost one hundred dollars, that he has already spent on it the sum of sixty dollars. He may get busy and finish it for forty dollars, and so come under the wire."

"Even then," interjected Barnes, "the gain and the loss

may not be related. Perhaps the same careful attention at the beginning would have resulted in getting the first half of the task done for forty dollars also, so that his preventable loss is really twenty dollars."

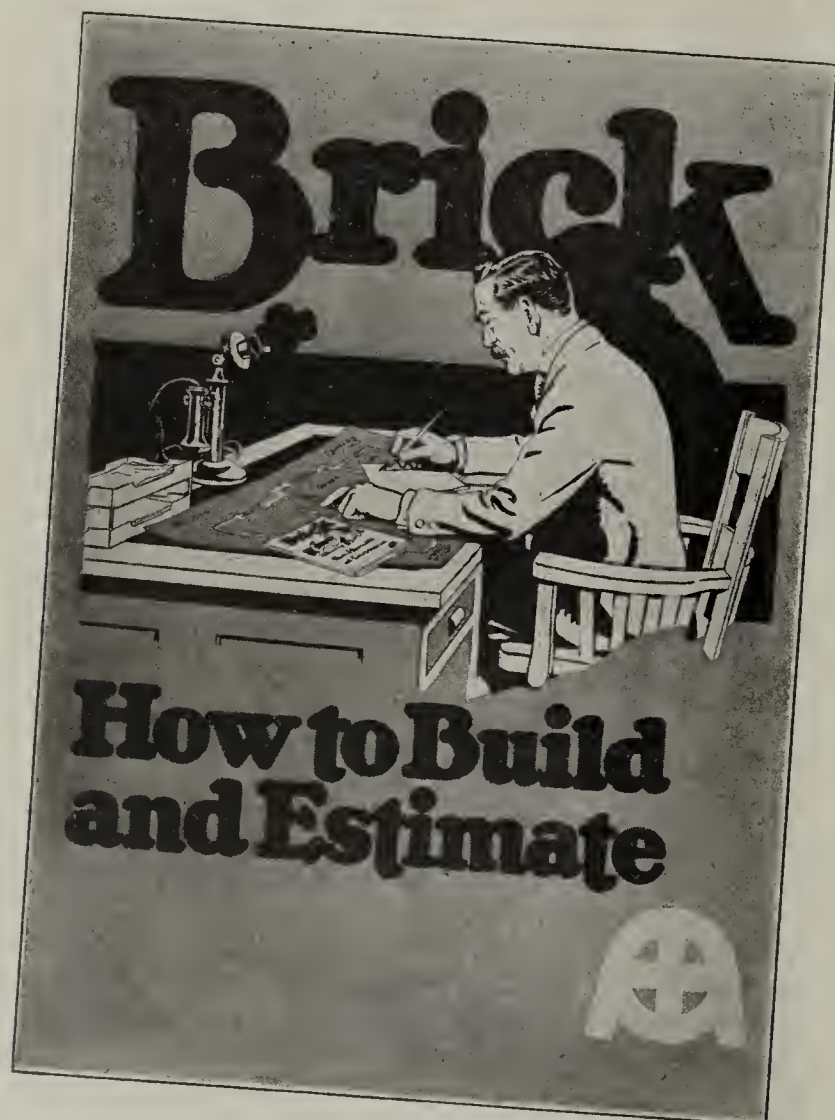
"Granted," confessed the G. M. "But at any rate he is not simply engaged in waiting until the twentieth of the following month to find when he has jumped the track. He doesn't simply divide something by something and imagine he has something as a result. His costs may exceed his standards for some operation by a thousand dollars, as a result of some accident which is not likely ever to occur again. Or, they may go up a thousand as a result of new conditions which will have to be reckoned within the next work on which he bids. Or, they may go down a thousand dollars as a result of some new process, which will enable him to quote a lower price next time. I must confess, Mr. Barnes, I am wholly converted to your new cost system."

"It surely tells what's what, and why," agreed Barnes, dumping onto the desk his collection of whittlings, which the fan promptly swept to the floor.

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How to Use Brick

There is a general lack of information regarding estimating and building with brick among many contractors and builders, especially in the small towns thruout the country, which results in a great restriction of its use. To make it easier to build with brick, Wm. Carver, who is in



Fifty Page Book, Eight and One-Half by Eleven Inches In Size, Excellently Prepared and Illustrated by The Common Brick Manufacturers' Association of America.

charge of the architectural department of the Common Brick Manufacturers Association of America, has written

a very helpful book for all home builders, contractors and architects.

The great advertising campaign that is being launched for brick, together with the scarcity and increasing prices of lumber, will result in rapidly expanding demands for brick homes.

In many sections of the country today a fire-safe, permanent and beautiful brick home actually costs less than a wooden house. All these facts are made clear in the very attractive book entitled, "Brick, How to Build and Estimate," which is for sale by the Common Brick Manufacturers Association of America, 1907 Conway Building, Chicago for the small sum of \$1.00 a copy.

This book covers the subject of all matters taken into consideration when a prospective home builder considers erecting a building. It is the A B C of brick construction and with architectural drawings, detailed information and photographs of actual buildings, shows the contractor of even small experience how to estimate and execute brick work profitably. It aims to put the contractor in line to supply the demand for permanent fire safe homes and that is certain to come in the immediate future. It will certainly increase the demand for brick, because it will remove opposition to brick on the part of contractors who mask their ignorance of brick by this attitude.

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High Wages Demoralizing to Brick Industry

Representatives of the Western Paving Brick Manufacturers' Association from Kansas, Illinois and Missouri met at Kansas City, on September 20, to discuss the difficulties their plants are having in getting labor to correspond with the demands that are being made for their output. They said it was next to impossible to keep the kilns properly manned and that tempting wages seemed to be no inducement to keep the ranks filled.

"High wages are proving demoralizing to workmen in brickmaking," a representative from Illinois said, "and it is next to impossible to get men to work to exceed four days a week. They make enough in four days to tempt them to lay idle the other two."

The problem the conference had to deal with was the furnishing of brick with which to pave Beardsley Road from Sixth to Seventeenth street to give traffic access to the lower level of the Twelfth street viaduct. The city wants the pavement down before cold weather. John E. Welch, the contractor, has delayed laying the concrete foundation, awaiting assurance that the brick would be forthcoming. The conference agreed to make special efforts to get these brick to the city within the next thirty days.

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Wm. G. Sharpe Addresses Brick Men

Some definite idea of just what the foreign markets hold out for the building material industry of America was obtained by brick and allied interests of Cleveland, Ohio, from the statements of William G. Sharpe, of Elyria, American ambassador to France during the greater part of the war. It is Mr. Sharpe's belief that not 90 per cent. of the building material that was expected to be shipped to France, to help build up the devastated territories, will go there. France does not want it in the first place, he claims, and the cost of shipping would be too great. The reason for this, Mr. Sharpe asserts, is because there is more than enough raw material in the country and accessible, to meet the demand of rebuilding towns.

STODDARD TELLS ILL.-IND. FACE BRICK MEN PLANS *for* PROMOTING USE *of* COMMON BRICK

THE ILLINOIS-INDIANA DIVISION of the American Face Brick Association held this month's meeting at the Claypool Hotel, Indianapolis, Ind., on Tuesday, October 14th. A number of common brick manufacturers were present at the invitation to hear Ralph P. Stoddard, secretary of the Common Brick Manufacturers' Association of America address the meeting.

Nearly all of the "regulars" were present, and as usual they showed the pep and interest that is characterized by the meetings of this division.

Following a roll call of all members present who were asked to give the situation at their plants with regard to labor, fuel and car supply and demand, all of which were answered in much the same manner as at the September meeting, some Association matters were considered.

A point was brought up with regard to railroad car supply which was of considerable importance. Any member who feels that he is being discriminated against by the railroads and is not receiving his proportion of the available car supply, should bring this matter to the attention of the secretary of the Association, accompanied with sufficient evidence to show his just cause of complaint for relief and the Association will bring this to the attention of the proper authorities. Better results can be obtained in this manner than if the individual concerns took it upon themselves to handle the situation. However, it was brought up that merely because a manufacturer could not get all the cars he wanted at the time he wanted them was not sufficient cause for complaint.

SAMPLE ROOM NEGLECTED—INCOMPLETE

Members were advised that the sample room which is maintained by the division, has been almost entirely neglected by the membership and also that it was incomplete in so far as having a complete line of each manufacturer's product. Many lines that are now obsolete are being

displayed while new lines are entirely absent. It was stated that this room contains an excellent exhibit and members were advised that they are missing a good bet when they neglect to pay a visit to this display.

A letter submitted by one of the members was read in which it was recommended that a resolution be adopted asking each member to send telegrams and write the Coal Operators' Association and government representatives urging them to oppose the granting of a six-hour day and full wage demands to the miners who are now asking for these terms. Should these demands be granted, it was said, the success would be followed by demands on the

part of other unions such as the railroads, which in turn would mean a considerable increase in cost of living besides affecting the brick trade very seriously. It was thought that the submission to the terms of the miners would mean an increase in cost of at least \$5 to \$6 per thousand brick manufactured. A resolution to this effect was drawn up and adopted.

Mr. Stoddard addressed the meeting following the adjournment of the Illinois-Indiana division, and gave a very comprehensive outline on the reasons and purposes of the organization known as the Common Brick Manufacturers' Association of America. He first touched upon the subject of association work, its exchange of information, legislative work, and other important matters which could only be carried on effectively thru this medium. Since most of the men in the audience were members of national associations they were well informed on this subject, hence, this point was not gone into with as much detail as would ordinarily be necessary.

THE VALUE OF ADVERTISING NOW, DISCUSSED

The matter of advertising campaigns now being undertaken by the American Face Brick Association and the Hollow Building Tile Association were discussed, and Mr. Stoddard stated that it was desired that the

THREE MORE BRICKS FOR SUCCESS



THAT IS ALL THAT STANDS BETWEEN YOU AND PERMANENT PROSPERITY—JUST THREE BRICKS TO A THOUSAND

MANY a time the average brick manufacturer has "thrown off" a dollar a thousand to get an order—perhaps you have—eh? Do you doubt that those days are coming again?

Everybody knows that the present shortage of brick is the result of the country trying to catch up after two buildingless years, coupled with reduced production.

After this rush there will be the same fighting for orders that there was before the war, unless something is done to increase the demand for brick.

It is impossible, by any method, to instantly stimulate the demand. It takes time, and NOW is the time to start it. Be prepared. Don't wait until you are begging for orders before you start to do something for yourself. Here are some of the things increased demand for brick will do for you:

Stop what you always have called "Rotten Competition."

Make strong the "weak sister" who is willing to give away profits and even some of his cost when business is slack.

Create better feeling among brick men because there will be no incentive for underhand work, or suspicion of it.

Keep everybody busy at home and out of the other fellows territory.

Permit a reasonable profit on your product so you can pay as high wages as any other manufacturer, and get all the labor you need.

Make the brick business a sellers market and end the buyers domination and unscrupulous methods.

Unite the industry from coast to coast so that uniform selling, contracting and credit methods may be adopted and the product standardized just as is done by steel, cement and other industries.

All this may be accomplished for you if you give your support to this organization and its National Advertising Campaign. It means an investment of only three bricks to a thousand and these will come back to you many times over. Everybody else has found that advertising pays. It will pay the brick industry. All substitute materials have gained their success, at the expense of brick, by advertising. It will cost you nothing because it will pay for itself as it runs. It will add to your profits and the satisfaction of doing business. Why do you delay?

RALPH P. STODDARD, *Secretary-Manager*
The Common Brick Manufacturers' Association of America
1907 Conway Building, CHICAGO, ILL.

Illustration of a Poster Which Has Been Designed and Distributed by The Common Brick Manufacturers' Association of America.

Common Brick Manufacturers' Association do similar work and serve the common brick industry in a manner such as the American Face Brick Association has served its membership. "The work Mr. Hollowell has accomplished for the latter association has been remarkably creditable as all those present well known," said Mr. Stoddard.

The chief topic covered by Mr. Stoddard in his talk was that of advertising. He stated that publicity was essential at the present time despite the fact that the demand for brick was excellent now. This as pointed out, was "abnormal" due to the reaction of the building restrictions that were in force during the war period. Mr. Stoddard said that the common brick industry was in a position now similar to an automobile that has just climbed a hill and was in the act of gliding down one which required hardly any effort on the part of the machinery. The gas has been turned off and the car is coasting, but soon the power must be turned on again for the land is not all level and hills must be climbed. Just so it is necessary now for brick men to plan for the future and aid in the climbing of the "hills" by advertising now.

The power of advertising was well impressed upon those present by an exhibit of charts which contained illustrations, trade-marks, and so forth, common to some national advertisers on which the name was omitted but which were readily recognizable, due to the fact that the advertising had been constantly before the public eye.

Mr. Stoddard cited the case of the raisin growers in California who were in a position parallel to that of the common brick manufacturers and stated that by organizing and advertising, this association had increased its production from 30,000 tons to 200,000 tons per year.

The object of the Common Brick Manufacturers' Association is to build up a strong organization and then form smaller groups such as now are prevalent in the face brick association. Such an association would then be in a better position to handle legislation and similar matters and finally the advertising of brick which is very desirable could best be accomplished thru this means.

SERVICES THUS FAR RENDERED

Some of the service that the new association has already given was pointed out. One of these was the connection made with D. Knickerbocker Boyd, prominent Philadelphia architect, who has organized an architectural service bureau. The purpose of this bureau is to aid architects in their specifications on brick masonry. One of the services this organization has already accomplished is that of re-writing specifications for brick used in the construction of United States post offices. Upon examination it was learned that the old specifications were thoroly antiquated and a lack of uniformity prevailed.

Another work accomplished by the Common Brick Manufacturers' Association of America was the preparation of the book entitled, "Brick—How to Build and Estimate," which was developed for the purpose of aiding the contractor. Many contractors, especially in the small towns, are carpenter contractors and hence their knowledge of brick masonry is but very meager and in figuring costs they are very apt to favor frame construction. However, after reading and studying the book, it is possible for them to figure and build brick homes with even less difficulty than houses built of frame.

The program for the future calls for advertising of brick in journals, booklets, and so forth, and the distribution of plans, specifications and complete working drawings for those who are interested. A trade-mark has been developed which will be stamped upon every brick turned out

by members of the Association and it will be a guarantee to the builder of a product of uniformity, proper strength, low absorption and of general good quality.

The method of securing funds for this campaign is by small and insignificant assessment for each thousand brick sold by the manufacturer. This applies to those face brick manufacturers also who sell their seconds as commons. However, in this case the assessment is only made upon the number of brick sold as commons.

Following this very instructive and interesting talk, all of the manufacturers present who sold any brick as commons, signed membership and advertising contracts with the Common Brick Manufacturers' Association of America.



Raise in Railroad Rates to Come Soon?

The industry should be prepared to hear at most any time of the decision on the part of the railroads to increase freight rates. The matter of raising rates has been discussed from time to time by railroad executives recently and the question of what, if any, increases should be made and how they can be taken care of, has been under much consideration.

A letter from Walker D. Hines, of the Railroad Administration, to T. DeWitt Cuyler, chairman of the Association of Railroad Executives, has been published in which Mr. Hines points out that the situation should be given study from two very important considerations:

A—Rates could not fairly be based upon the unfavorable showing made by the Railroad Administration during the early part of the year because that poor record is due largely to an unusually small amount of business. Hence, any change in rates which are determined upon those conditions would not be just. It is advisable to wait for a better opportunity to decide as to what earning capacity the railroads would have during a normal period before formulating any general increase in freight rates.

B—It was emphasized that the public would not be satisfied to have any general increase in rates to go into effect without the concurrence of the Interstate Commerce Commission.

It is also necessary that there shall be an opportunity to allow the public to review and give consideration to any new rate proposals. Accordingly, it would be impossible to establish any rate changes before January 1, 1920.

Also, any new basis of rates would have to be considered from the angle of the necessities of each individual road rather than from the unified operation of all railroads. The railroad corporations, if they desire to make any progress at this time with this matter, should study the problem of what tariffs they think ought to be proposed with the idea of filing them with the proper public authority.

In view of the fact that most of the traffic experts, who would ordinarily be relied upon by the railroad company, are employed by the Railroad Administration, Mr. Hines volunteered to provide these experts to aid the railroad corporations in studying this problem.



"Produce More and Spend Less"

A man wrote a full column of fine print in one of the newspapers trying to tell the only way to overcome the upward tendency of the cost of living. And the inspired head writer on the newspaper condensed the whole thing, and said it far better in these words: "Produce more and spend less."—*The Valve World*.



FINE CERAMIC MANUFACTURE

A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products Such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

WAR AND POST-WAR PRICE CHANGES IN CERAMIC WARES



HIS ARTICLE, which is reprinted from Bulletin No. 38 of the War Industries Board, is one of fifty similar studies of wartime prices in different industries, issued to provide a permanent record of the great revolution in prices during the world war and to collect the price quotations gathered by various Government agencies so that they will be available to men concerned with problems of business readjustment.

As the chart of clay prices shows, the prices of fire clay have advanced far more rapidly than the prices of china clay. The extraordinary demand for fire brick for furnace linings of course gave rise to an extraordinary demand for fire clay, and this demand combined with the higher labor cost naturally stimulated fire clay prices to a high level. The production of fire clay increased fifty per cent. between 1915 and 1917 in response

to the increase in the production of fire brick. The domestic production of fire clay is now over seventy-five per cent. of the total production of the higher-grade clays dug in the United States. Very little fire clay is imported.

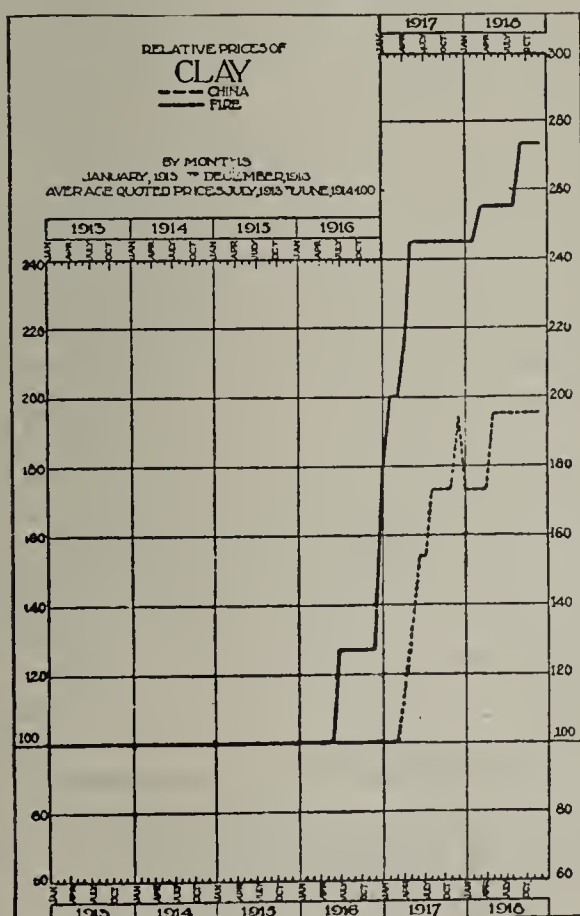
CHINA CLAY OR KAOLIN

Altho the demand for domestic chinaware was not curtailed much by our entry into the war, kaolin prices did not advance as rapidly as those of fire clay, because imports from England—our chief source of supply—continued in almost undiminished volume during the war, being sent as ballast on ships returning from Europe. Only a small part of our consumption of kaolin is produced in this country. The estimated production of fire brick in 1917 was 1,373,674 and the value was \$63,637,600 according to the United States Geological Survey.

POTTERY PRODUCTS

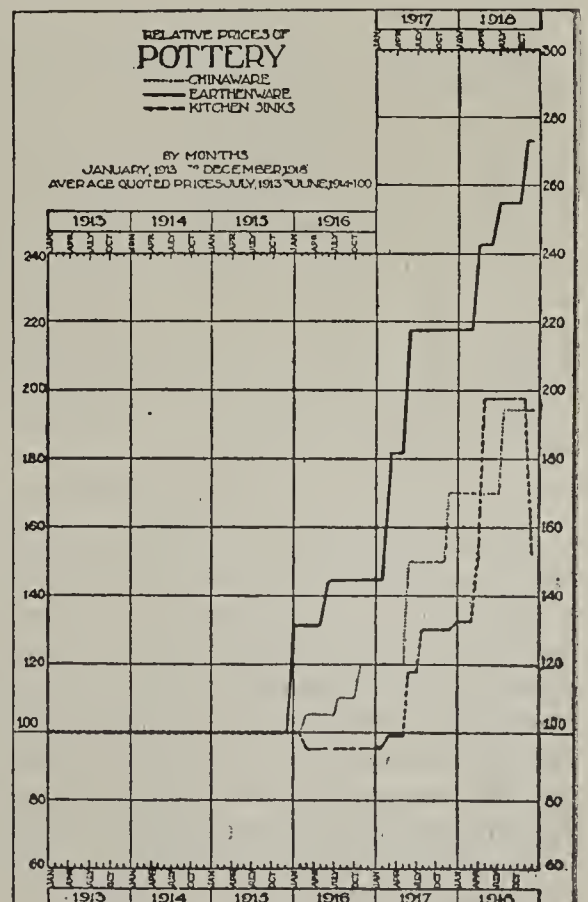
Pottery prices followed the general trend of the prices of other clay products, except that during the period of rising prices their advance was somewhat more pronounced than the increased price of common brick. Labor, in the case of pottery as in the case of other clay-working industries, forms the largest element of cost, or about 60 per cent. on the average. The cost of raw materials is a larger element than in the case of common brick, amounting to as much as 30 per cent. in chinaware.

The advance in the price of chinaware has been due to the increased American demand for the domestic product after imports from Germany, which normally supplied forty per cent. of imports, were eliminated and imports from other countries greatly curtailed. The value of the American pot-



Relative Prices—Clay: Fire and China—By Months, January, 1913, to December, 1918. (Average Quoted Prices, July, 1913, to June, 1914, Equals 100.)

Relative Prices — Pottery: Chinaware, Earthenware and Kitchen Sinks—By Months, January, 1913, to December, 1918. (Average Quoted Prices, July, 1913, to June, 1914, Equals 100.)



tery product has increased rapidly in recent years from \$37,325,388 in 1915 to \$48,217,242 in 1916 and \$65,222,951 in 1918. Imports which were valued at \$10,177,451 in 1914 have dropped to \$5,600,585 in 1916 and \$6,333,314 in 1917.

While the value of American pottery has thus increased, the net physical quantity of the output has probably remained stationary or even declined. The rise in price, however, caused the total value of the product to be greater.

The pottery industry turns out a vast number of products, and it is impossible to reduce them to a common denominator of physical quantity. The grades, styles, and brands of chinaware alone are of almost infinite variety. However, the main divisions of pottery consist of, first, white ware, forty per cent. of the total value in 1917; second, sanitary ware, about twenty-two per cent.; third, porcelain electrical supply, about sixteen per cent.; fourth, chinaware, about eight per cent.; fifth, stoneware, seven per cent.; sixth, red earthenware, about two per cent.

The pottery industry is localized chiefly in Ohio, New Jersey, New York and West Virginia. Ohio is the leading producer of white ware, stoneware, porcelain, electrical supplies, miscellaneous clay products and red earthenware, but New Jersey takes first place in chinaware and sanitary ware.

SANITARY WARE

Sanitary ware, which ranks next to white ware among pottery products, increased steadily from 1908 to 1918, with the exception of a slight decline during the business depression of 1914 and 1915. A rise in the value of sanitary products was especially noticeable between 1915 and 1916. Since the price of sanitary ware did not advance appreciably before 1917, not much of this increase was due to a rise in price. The price of sanitary ware was very stable for the three years 1913, 1914, and 1915 because the demand for sanitary ware is fairly stable, not being influenced to a marked extent by changing business conditions. A rapid advance in the price of sanitary ware, however, began in 1917 and continued thruout 1918. The advance was especially rapid during 1918, so that by the latter part of the year the prices were more than double those prevailing in 1917. This increase of price was due partly to the higher labor cost, which comprises at least half of the total expense of production.

Undoubtedly the chief reason for the fifty per cent. increase in price that occurred during April and May 1918, was the order of the Fuel Administration on April 13, 1918, restricting the supply of coal and fuel oil for the manufacturers of sanitary ware to fifty per cent. of normal consumption. This enforced curtailment of production enabled makers to sell the reduced output at higher prices. The belief that the rapid increase in prices of sanitary ware was due to the order of the Fuel Administration is supported by the fact that as soon as the order of the Fuel Administration was vacated, on November 30, 1918, the prices of sanitary ware immediately dropped to the prices prevailing in the early part of 1918.

CHINAWARE

Chinaware prices have advanced in proportion to the prices of other clay products. The curtailment of imports from Europe and the extensive demand of the Government for the cheaper grades of chinaware for ships and cantonments offset the limiting effect of the war upon the normal demand for chinaware and caused the domestic industry to increase the value of its production to a point where it exceeded the value of the imported product.

Chinaware of a distinctly higher grade than the domestic product is the chief clay product imported into this country. In spite of the high duty of fifty-five per cent. on imported

chinaware, the domestic industry has been unable to make the higher grades of chinaware in competition with foreigners.

The value of imported chinaware has declined to one-third of its normal volume during the war, and the chinaware manufacturers have thus been given an opportunity to supply this vacuum either by the substitution of cheaper chinaware or by the increased production of a higher quality of chinaware.

* * *

Trenton Potteries Particularly Active

To say that every pottery at Trenton, N. J., is over-sold would probably be coming a little "too strong," but in a canvass of the pottery districts in this city, it is rather hard to find plants that have not orders ahead for many months to come. At the chinaware establishments, some of the prominent concerns have advance orders for a year to come, and requests for production are being received daily. It has become a matter in this line of securing all possible available help and pushing production to the limit. The electrical porcelain plants are busy and the sanitary ware potteries are feeling the effects of the building movement in a very substantial way. There is certainly no cause for complaint in the line of present business in the pottery industry, but in the rush of things one cannot lose sight of the fact of labor shortage, and far more important, a tariff revision that will go to fully protect the American potter.

The Electric Porcelain & Manufacturing Co., Trenton, N. J., has filed plans for the construction of a one-story kiln shed addition to its plant on New York Avenue.

The Resolute Pottery Co., Trenton, N. J., has commenced the erection of a new one-story brick building on Third Street, to be used as a store house and for other service.

The American Pottery Corporation, recently organized under Delaware laws, with a capital of \$2,000,000, to operate the former Willets Pottery, Trenton, N. J., has arranged for a stock issue of \$500,000, to be used in part for extensions and improvements in the present plant, with the installation of additional equipment for increased capacity. The company will specialize in the production of high-grade chinaware, known as "Willets Belleek," and less expensive chinaware for hotel and other general service. Sanitary ware, including tile, closets, lavatories, semi-porcelain and semi-vitreous wares will also be produced. Charles T. Hancock is president.

The Trenton Potteries Co., Trenton, N. J., is doing some commendable work for the promotion of all-clay plumbing fixtures in connection with its national advertising for its well-known sanitary wares. It is set forth that plumbing fixtures of this character are the "most hygienic for bathroom, kitchen or laundry." The company's production in this line is put out under the trade name of "Tepeco" which is also used for porcelain baths and other specialties. The "Tepeco" plumbing fixtures are advanced as being solid and permanent; dirt does not cling to the surface, nor is the surface affected by scouring. A high-grade closet is manufactured by the company under the trade name of "Si-Wel-Clo."

* * *

Five New Tunnel Kilns for Greensburg

Extensions in the pottery manufacturing business show more activity this fall season than for many years. A number of new kilns are being planned, and with the new ones

placed in operation late in the summer, the value and volume of production for the current fiscal year will show a material increase over the last official records. In addition to the seven kilns announced to be erected at Scio, Ohio, by the Scio China Co., and two additional kilns at the plant of the Carrollton Pottery Co., Carrollton, Ohio, the announcement is now made that the Pittsburgh-American China Co., whose new plant is being located at Greensburg, Pa., will build a battery of five tunnel kilns of the largest type. Three of these kilns will be used for vitreous hotel china firing and the two others will be used for the firing of tile and kindred products. The contract for the kiln construction has been awarded Gamble & Bryan Co., of East Liverpool, and materials are to be delivered at an early date.

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Rushed on Vitreous Hotel China

The Shenango China Co., of New Castle, Pa., has just completed the erection of a new sagger kiln which will more than double the sagger firing capacity of that plant. This concern is working to capacity in the production of vitreous hotel china, having both a plain white and decorated line.

Operations at the plant of the Chelsea China Co., at New Cumberland, W. Va., will be started within a few weeks, according to statements of officials of that company. Considerable time has been occupied in the razing of the old kilns and making improvements in other departments of the plant. The new tunnel kiln in this pottery has been finished, and is now being used for the firing of saggars. The firm will feature the making of vitreous china hotel ware in plain white for a short time, and then will start the development of a decorated line. Mold makers have been working in this plant for several weeks and sagger makers are also being employed. It will be December, however, before shipments can be made, and by the end of the year the pottery will be operating to capacity.

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Generalware Potteries Very Active

The volume of business being offered domestic pottery manufacturers is such that all general ware potteries thruout the country are assured of steady operations for practically a year hence. The large number of department store and buyers for jobbing interest who have been in the market of late have been placing their orders for January and February delivery, but others have specified March and April shipments. A few have placed their requirements up to August 1 next year. It is practically assured now that there will be very little increase in the volume of ware imported into the United States, because the production of the English, French and German plants will be required for home and nearby consumption. This will leave practically a clear field for the sale of American merchandise. Buyers are realizing the situation and are placing their future requirements accordingly.

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No Advance in Freight Rates

The Traffic Department of the Trenton (N. J.) Chamber of Commerce has been successful in its negotiations against the proposed advance in freight rates on sanitary earthenware products to southern territory, enabling Trenton concerns to compete in this district under conditions as heretofore and at no great disadvantage. Hearings have been held before the Interstate Commerce Commission at Washington, the matter having been referred by the Railroad Administration to this commission for advice, as under the railroad control act, this body can

act in an advisory capacity only until ratings become effective. The commission refused to make any change in the present schedules; the proposed rates would have effected an advance of about 40 per cent. on all shipments in and south of Virginia and the Ohio River, resulting in a serious handicap to local sanitary ware manufacturers. The Traffic Committee of the Chamber of Commerce is composed of Edward Hammann, M. D. Warren and George E. Hoffman, the latter being secretary of the Monument Pottery Co., Trenton.

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Installs New Kiln for Firing Crucibles

The Lava Crucible Co., with main offices in Pittsburgh, Pa., and plant at Zelienople, Pa., is erecting an additional kiln for the firing of crucibles. This kiln is the largest so far ever built for such a plant. The product of the firm, however, has been so developed since the start of the war that a large percentage of crucibles formerly imported are now being made here and sold to domestic consumers. This kiln is of the muffle down-draft type, and is an improvement over similar kilns heretofore constructed.

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Big Improvement in Sanitary Ware Demand

A decided improvement is reported in the demand for sanitary ware, and plants engaged in this line are working to greater capacity than has been the rule during the early part of the year. There has been a gradual increase in the volume of new building construction thruout the country, and the more modern sanitary appliances are being installed. This has been the main factor in the improvement of operations in these sanitary plants. From time to time additional casters and pressers are added to the forces, and production is being steadily increased in all of the factories.

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Veteran Potter Passes Away

Samuel Swank, Sr., one of the oldest residents of Johnstown, Pa., and one of the founders of the Swank Brick Co., died at his home in Johnstown on October 1, after having been in ill health for a long time, altho able to be about. Mr. Swank was born in Somerset County in 1838, having celebrated his 81st anniversary on September 27th. Sixty-four years ago he came to Johnstown with his brother, the late Hiram Swank, and established a pottery which was then known as Hiram Swank & Bro., which name was years later changed to the Hiram Swank Sons Brick Works. Mr. Swank had not been actively engaged in the brick business since selling out to his brother some thirty years ago.

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In the British Potteries

The operatives of the pottery industry in all departments have applied for a twenty per cent. advance, and have decided to press their demands. In the china section the manufacturers have given notice of a reduction in making prices ranging from five to forty per cent. The Pottery Workers' Society will offer the strongest resistance to this.

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An improvement has been reported in the eastern Ohio pottery district with reference to the transportation situation. The car supply is slightly improved, while local shipments are being forwarded in rather reasonable time. However, the usual congestion is being anticipated during the late fall season, and this has caused buyers to order out merchandise as quickly as possible.

The SUPERINTENDENT

Helpful Hints for Practical Men Whose Problem is Maximum Production With Minimum Cost

The Fundamental Principles of Safe Guarding

**By Sidney J. Williams*

The first half of our subject is—what shall I guard? The second half is—how shall I guard it?

If you want your plant to be 100 per cent. safe, the answer to the first question is—guard every moving part, wherever located, on which a workman might be injured if he came in contact with it in any way or from any cause whatsoever. If the moving part is in a place “where nobody ever goes” remember that some one is likely to go there sooner or later, in connection with the repair or maintenance or alteration of the machinery itself or of the building, or for some other reason which you cannot anticipate. You probably have heard the classic story—a perfectly true story—of the man whose heel was cut off by an unguarded gear 14 inches below the ceiling. The man was standing on a scaffold, working on another shaft nearby; to brace himself he placed his foot against the shaft on which the unguarded gear was located, his foot slipped, and was caught in the gear. Many similar examples could be quoted of accidents occurring in out-of-the-way places. Recognizing this fact, the Illinois Steel Co. rule-book—to mention only one example—requires that all gears, wherever located, must be enclosed.

You may be puzzled by attempting to apply this principle to the guarding of overhead shafting and belts. Many shafts contain miles of overhead shafting which it is almost a physical impossibility to guard. On the other hand, oilers and repairmen are frequently injured, sometimes fatally, on unguarded overhead shafting or belts. The only solution is, if



How One Clay Products Concern Safeguards a Belt Drive Between an Electric Motor and a Roll Crusher.

the shafting positively cannot be guarded, to prohibit absolutely any work on such overhead transmission while it is in motion. Repair work, shortening of belts, etc. can be done during the noon hour or at night, oiling likewise—or better still, install automatic oilers or oilers which can be filled from the floor by using a special oil can with long spout. For

details, see the National Safety Council's safe practices pamphlet on this subject.

A gear or belt or other dangerous moving part which happens to be located below a table, or in some other place where it is partially hidden, is not thereby made safe. Someone occasionally must reach under the table to sweep or repair the floor or oil or repair the machine. Someone may slip or stumble so that his arm comes in contact with a gear or belt which would be safe for the workman standing in his normal position.

What I have said of gears and belts applies equally well to any moving parts on which a man might be injured—counterweights, cranks, reciprocating part such as a planer bed, and so on; also, of course, to the operating point of machines.

The second half of the problem is—as already stated—“How shall I guard it?” Here are a few points to remember:

1—A safeguard should be so designed and constructed that it will prevent *All* accidents on the part guarded—not only accident to the operator while at his regular work, but also to the operator or passers-by in case they slip or fall or carelessly touch the machine.

2—The guard should not interfere with production. If it does, it is liable to be taken off. In designing a guard it is generally wise to consult the man who will use it.

3—In general, the guard should be attached to the machine and not to the floor; if attached to the floor, use a connection which will interfere as little as possible.

4—The guarded part must be easily accessible for oiling, inspection, and repair. The door or removable section provided for this purpose should be hinged or otherwise attached to the remainder of the guard, or to the machine. If not, it is likely to be left off permanently.

5—The guard should not interfere with cleaning and sweeping around the machine. It should, therefore, be kept generally about six inches above the floor.

6—The guard should be strong enough to resist injury and keep in shape. A light, flimsy guard soon becomes bent and is discarded. A substantial guard is cheaper in the end.

7—Incombustible guards are preferred. Wooden guards, soaked with oil, may become a serious fire hazard. Metal guards are neater and wear much better. “Metal guards look as if you wanted to; wooden guards look as if you had to.” Guards may be made of cast iron, sheet metal, wire mesh, expanded or perforated metal, or slats. Where subjected to acid or fumes, wooden guards may be necessary.

8—It is desirable to interlock the guard with the operating mechanism, where possible, so the machine cannot be operated unless the guard is in place.

9—A safeguard can often be so designed that it will also serve to prevent wear on the parts guarded—for example, a solid gear enclosure.

Let us consider the application of these suggestions to the design of gear guards. Cast iron guards are preferred because they may be made to fit more snugly, present a better appearance, and protect the gears from dust and injury. In

*Presented at the Eighth Annual Safety Congress at Cleveland, October 2, 1919, by Mr. Williams, secretary and chief engineer of the National Safety Council, Chicago.

shops having similar gears on several machines, the cost of patterns and cast iron guards will be no greater than the cost of "built-up" guards. A cast guard of one machine may be used as a pattern for making guards for similar machines.

Guards for a variety of machines, and in many sizes, may be more cheaply made of sheet metal. In large guards, an angle iron is used to make the joint between the flat sides and the curved part of the guard. In smaller guards this joint may be made by cutting projections (like saw teeth) on each side piece and bending those over to form a smooth curve. The joint may then be made either by spot welding or by riveting. Short pieces of angle iron may also be used to form the joint—about $\frac{3}{4}$ -in. x $\frac{3}{4}$ -in. x $\frac{1}{8}$ -in. angles, one inch long, 3 in. or 4 in. apart.

Gears should be completely encased; or where this is impracticable, should have a band guard with side flanges extending inward beyond the root of the teeth. If there is a spoke hazard, the gear should be completely enclosed, or filled in between the spokes.

Belts, flywheels, shafting, and large gears are often guarded by an open-work rather than a solid enclosure. Such guards should be so designed that no one can get his hand or his finger into the danger point even if he tries. If the guard comes within four inches of any danger point the opening should not be greater than one-half inch square, which is small enough to exclude fingers. If more than four inches away—which is about the maximum length of a man's finger—the openings may be larger than one-half inch, but not larger than two inches square, this being small enough to keep out a man's hand. If a slatted construction is used the slats should not be more than one inch apart.

The safety engineer's greatest difficulty is in guarding machines on which men are working. Let us repeat that it is very important not to attempt to guard machines in a way which will interfere with production. The great majority of both foremen and workmen will seriously object to such a guard, will use it under protest and when the opportunity arises they will take it off and not put it back. I have time to mention only two examples—the circular saw and the punch press.

A guard is not the only essential for safety in operating a circular saw. For ripping, it is very important that the saw be provided with a splitter. Keeping the saw sharp and properly set will greatly decrease the danger of throwbacks. The floor where the operator stands should have a nonslip surface.

Safety engineering does not consist in simply building wire mesh guards, nor in buying safety devices which look pretty in a catalog, and putting them on the machine without regard to the wishes, the convenience, or the efficiency of the operator. The real safety engineer will, where necessary, study the operation of a machine until he understands it as well or better than the operator himself—as well as the foreman, the superintendent, the master mechanic; and then he will apply their brains and his own in working out either a guard, or a change in the machine, or a change in the operation, which will remove the underlying hazard and make the operation intrinsically safe.



Ideas Under a Bushel

For some reason or other, the natural tendency seems to be "keep mum about trade kinks." When a worker, foreman, or anyone else discovers an easier way to do something, he hastily looks around to see whether or not anybody saw him do it in the newer or better way. He thinks to himself, "This kink is too valuable to reveal

to others. I'll keep it to myself, and it may help me some time." He, therefore, keeps it to himself. He does the work the "old" way because the "new" way is his secret, and he fears somebody will steal his idea from him. The longer he keeps it, the more valuable it seems to him. He never lets go of it, and perhaps lives to see someone else discover the same trick. The "other fellow" tells about it in the technical or trade papers and forges rapidly to the front.

Ideas are valuable, true enough; but they are of no value whatsoever if they are not used. If an idea is good and is patentable, and seems to be worth patenting, the thing to do is to take out a patent.

Many ideas that are good are not patentable. For example, in many plants time and energy are lost blowing dust and lint out of machines with hand fans. That is the way it always has been done, and for that reason the foreman think that is the way it must be done. A girl who had to do the work in one plant suggested one hot day that the foreman furnish her with an electric fan for doing the same work. He "tumbled" and furnished the fan. It worked nicely, did the work better, more quickly, and did not cause the girl to over exert herself. Many little improvements of this simple nature are possible in and around the plant.

A friend of mine explained it to me in this way not long ago. He said, "Let us trade dimes. You give me a dime for one of my dimes." We traded. Then he said, "We haven't progressed a bit. You are no richer than you were before." I agreed with him. "Now," he said, "Let's trade ideas. You tell me how to rearrange my belting system to save power and I'll tell you how money can be saved on lubricants." I agreed, and we traded ideas. He then showed me that we were both richer in ideas. The progressive man isn't afraid to tell what he knows or ask questions about what he doesn't know. He doesn't keep his light under a bushel.—*W. S. Schaphorst.*



The Feathering of a Clay Column

When a clay bar feathers as it issues from the die, it may be due to several causes. Usually, feathering may be traced to improper tempering. Both extremes of tempering, i. e., too much or its opposite, may be responsible for poor results with the clay column. Inexperienced men at the tempering machines usually meet with this difficulty at frequent intervals and it is because of the fact that they are not accustomed to manipulating the water supply and pug-mill so as to get the proper consistency of the clay mass.

Another cause for feathering is insufficient lubrication. This is not an uncommon cause and must be considered whenever this condition occurs. Lack of uniform lubrication in the corners of the die may cause friction and consequently hold back the bar at the corners. This difference in the flow of the column causes strains to be set up that invariably tear or feather the edges.

Other causes such as too long or too short a die and too soft a column are also given as reasons for the tearing of the clay bar. In the case of hollow building tile, this characteristic is often desirable and may be obtained by resorting to one of the methods given above as the cause for this phenomena.



"If there was ever a moment when it behooved all men engaged in productive commerce—laborer—capitalist—farmer—mechanic—banker—manufacturer to join hands and move forward, now is that moment."

IN *the* WAKE *of the* NEWS

Being a Brief Mention of a Host of Interesting Happenings in the Varied Fields of the Clayworking Industry

San Francisco Active in Building Line

With the continued growth of building activities in and about San Francisco, brick and other clay products manufacturers are reaping the benefits from improved conditions to a considerable extent. The market for building materials of clay origin is reported quite brisk at present. While strikes of shipbuilders in that city and other points around the bay and the street car strike in Oakland, has hindered progress to some extent along these lines, contractors are nevertheless, doing their utmost to see that work does not suffer in consequence.

The efforts of those interested in real estate and building in that city, to make San Francisco a city of homes, is meeting with very fair success. There is a strong movement on foot to populate the outlying districts of the city, build homes and in that manner relieve the congested condition of the down town section. In all parts of the city residences are going up, and while it is true that this type of structure does not mean a great amount of business for the brick people, nevertheless, as part of the general progress of the city, it cannot fail to result in a greater volume of business for all building material industries.

Plans have been completed and segregated figures are now being taken for a five-story and basement brick apartment house which is to go up at the northeast corner of Stockton and Emma streets at an estimated costs of \$55,000. Another brick structure is planned for Post street between Hyde and Leavenworth streets. The building is to be one story in height and will be used for store purposes. The approximate cost of this has been figured at \$10,000.



Renewed Interest in Building at Fresno

During the past six months, there has been a noticeable increase in the cost of labor and building materials in Fresno, Cal., which corresponds to a similar situation in all parts of the country. For a time it seemed as if capital in that town were waiting for a possible drop in prices, but according to recent reports from that vicinity, people are apparently tired of waiting and property owners of Fresno, during the past month, have indicated a renewed interest in building that promises a great deal for the next few months in new construction. In practically every architect's office in the city there is a renewal of the activity that marked the spring months. At the present time there are projects in various states of negotiation, which will aggregate several millions of dollars; and a number of building material dealers are of the opinion that the next thirty days will develop the announcement of some of the most important building plans since the war. It is said that brick, lime and all masonry materials have increased about 15 per cent. within the last six months. In discussing the price and supply of brick, F. J. Craycroft, president and manager of the Craycroft Brick Co., a firm that supplies a large portion of the brick used in Fresno, stated that the present price per thousand delivered at Fresno is \$16.50 as against

\$15 in July of last year. "There is no shortage of brick" said Mr. Craycroft. "The only shortage is that of delivery." He stated that the Craycroft plant now has a capacity of 50,000 brick per day, and is running full time. According to his latest statement, there is now on hand 2,500,000 brick and the brick-making season has yet about six weeks to run. It is Mr. Craycroft's opinion that with the supply already on hand and the output of the plant for the remainder of the season, the needs of the city will be taken care of.



Lincoln Plant Busy on Foreign Orders

It is stated that the pottery works of Gladding, McBean & Co., at Lincoln, Cal., is preparing for the busiest times in the history of the factory there. The huge new three-story fireproof building is practically completed. The structure is 300 feet long and 100 feet wide, equipped thruout with the most modern machinery. According to the opinions of numerous experts on the subject, the architectural terra cotta manufactured by this pottery is the finest in the world and the plant now has contracts for the product in many parts of the United States in addition to Australia and the Orient. The company expects to employ about 100 men and the officials are endeavoring to bring men with families who will become permanent residents of the town. O. Spears, terra cotta expert from the Los Angeles offices of the company recently spent several days at the plant in Lincoln.



McKnight Plant Now on Commercial Scale

According to the latest reports of J. H. McKnight, manager of the McKnight Fire Brick Co. of Porterville, Cal., the experimental stages in the manufacture of fire brick at the new plant are now passed and the concern is prepared to manufacture magnesite, chrome and silica brick on a commercial scale. Mr. McKnight stated that he anticipated no difficulty in securing plenty of orders as he has already been forced to turn away business that exceeded the output. He expects his brother, J. L. McKnight shortly, who will become associated with the business in a more active manner.



Will Build Homes Using Own Materials

The Sacramento (Cal.) Pressed Brick & Sand Co. has received permission to sell and issue shares of its capital stock in exchange for certain property and cash. The company has acquired a number of Oakland building lots and plans to erect residences there, using its own materials.



Fort Collins Gets New Firm

Articles of incorporation for the Fort Collins (Colo.) Pressed Brick & Tile Co. have been filed, the organizers being: H. G. Finley, G. H. Dixon and H. A. Meyer. The capital stock of the new concern is \$15,000.

Delaware Building Operations Growing

Operations in the building line at Wilmington, Del., and vicinity are growing in volume and strength, particularly in neighboring districts, and the outlook for continued activity is encouraging. Difficulties in the matter of labor differences are still evidenced and there is a little uncertainty in this direction at the present time. The majority of construction is devoted to housing work and there is a strong call for residence structures of all kinds; an exceptionally large volume of permits has been issued recently for the erection of new garages, and many of these are of brick or hollow tile type, both being very popular materials in this locality. There are a few important industrial projects going on at this time. Plans are under way for the construction of a new local Y. W. C. A. building and this project will be launched at an early date. The Liberty Morocco Co., will build a new six-story plant on Liberty Street, to cost about \$65,000, while the Lobdell Car Wheel Co., will build a one-story, brick addition for increased operation.

Mason material dealers in the Wilmington, Del., district are receiving a fairly good call for brick and other burned clay products. At the same time, the demand is not quite as stable as might be desired, but the inquiries from out-of-town sections are growing. Common brick is selling for \$20 a thousand, delivered on the job, with salmon varieties quoted at about \$5 less. Fire brick holds well at \$64 a thousand for first-grade stock, and is operating under fair call. Face brick of good quality is obtainable around \$40 to \$45 per thousand. Other burned clay products, including building tile, partition tile, drain tile and paving brick and kindred specialties are in good demand.



New Incorporation for Wilmington

The United Clay Products Corporation, Wilmington, Del., has been incorporated with a capital of \$100,000 to mine clay, sand and other materials, and manufacture burned clay and ceramic products of various kinds. M. Butler, B. M. Barrett and M. M. Lucey are the local incorporators.



Grand Jury to Investigate Brick Company

The business methods of the Decatur (Ill.) Brick Co. are to be the subject of a "careful and conscientious" investigation by the grand jury, at the request of Judge Whitfield, who ordered the jury to investigate the stories that the brick industry in that community is operated as a combine, it is reported. The connection which the brick company has with the sale of outside paving brick will also be a matter for the jury to investigate.



Cave-In Causes Death of Employee

Henry Wiemeier, 23 years of age, employed by the McEwing Clay Products Co., was killed on October 11 at St. Elmo, near Vandalia, Ill., when an embankment of earth caved in on him. Mr. Wiemeier but recently returned from army service in France.



Iowa Plants Making Big Improvements

The Carlisle (Iowa) Brick & Tile Co. is making extensive improvements to its plant. Among the most important changes to be made is the addition of a Proctor

dryer which will be installed about the first of the new year. The type of dryer to be installed at Carlisle is guaranteed to dry 18,000 tile 5x8x12 every twenty-four hours and this improvement alone is expected to be a big production help to the plant. The company is also adding a large new storage shed with button conveyors to distribute the shale in the shed and carry it from storage to the grinding pans. The Carlisle company will use a new type oil-burning steam engine to haul the shale from the bank to storage. The oil supply is provided in a silo tile tank above the ground. Several new kilns are being installed and force draft furnaces placed in the kilns so that the burnings will be completed in forty-six hours.

The Kalo (Iowa) Brick & Tile Co. is installing ten new tracks in its dryer and will soon open a new shale pit across the river from the present plant. Shale will be conveyed from the new pit by rope tramways.



Iowa Producers to Have Trade-Mark

The committee appointed at the annual meeting of the Permanent Buildings Society to work out a trade-mark for clay producers of Iowa has decided upon a trade-mark to submit to the members of the society. If the decision of the committee is approved by the members, stamping wheels will be ordered at once to be used in marking the wares. The trade-mark to be submitted is a very simple one; the letters "IA-KLA" in a small hollow square, and it is thought that within a short time all of the twenty-six clay producers who are members of the Permanent Buildings Society will be putting out their products bearing this imprint.



Louisville Building Prospects Excellent

September proved to be a very excellent building month in Louisville, and a gain of something more than 350 per cent. in value of permits issued was shown for the month. There is a very fair demand for brick and general building supplies and the trade as a whole is busy. Hollow tile is moving somewhat better than it was, while sewer pipe is in good demand. Fall operations are much better than had been expected, and indications are for a better volume of carry-over business into 1920 than even the most optimistic had considered.

There are now a number of big projects in view, and in November Louisville will vote on a big sewer bond issue, which will probably result in a big sewer pipe demand next season. At the present time there are some excellent hotel and theater projects in sight, which should develop business at an early date.

Regular deliveries are being made by the P. Bannon Pipe Co., on the annex to the Atherton Building, which is being constructed of hollow tile and concrete construction. The first floor tile has been laid and concrete pouring around the tile started.



Louisville Architect Discusses Costs

A prominent engineer and architect of Louisville in discussing building operations recently stated that it was costing \$30 to \$40 a thousand to buy and lay a thousand brick today, whereas the old cost was around \$12 to \$15. Brick a few years ago were being delivered on the job at around \$7 to \$8 a thousand, whereas today they are costing around \$17 a thousand, and the cost of labor, mortar, etc., is forcing up the price. However, prices of pine and building lumbers

have been increasing steadily, and brick prices are not out of line.

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Steel Strike Holding Up Large Orders

J. H. Bell, of the Louisville (Ky.) Fire Brick Works, in discussing operations said: "We are still feeling the steel strike strongly, and are only operating about seventy per cent. of capacity. A good many large orders are being held up until the strike is settled, and it is very hard just now to figure out when that may be. The steel industry is our one largest source of business, and naturally it has hurt."

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Baltimore to Front in Construction Work

Construction operations of all kinds, large and small, continue apace at Baltimore, Md., and not only in the city proper, but neighboring environs are "going to it" with a decided determination. Structures of all kinds are now under way or projected, ranging from large industrial plant buildings to modest dwellings. Particular attention is being given to the housing situation, and the operations in this direction indicate the enterprise and progressiveness of those in the building trades in this locality. The aspects for a continuance of "top notch" operations are decidedly encouraging, and the fall and winter seasons are expected to usher in a number of new important projects, and consequently active times for manufacturers of brick and other burned clay products, as well as mason material dealers. Those in these branches of the industry are quite well satisfied these days, for with the call for materials it is hard to accumulate stocks, and this means that things are moving in the right direction.

With nine months of the year past, it is interesting to note how strongly Baltimore, Md., has come to the front in the matter of construction work, and incidentally, the popularity of brick as the permanent building material in this section. Since January, plans have been filed for residence work covering 2,233 two-story brick dwellings and 132 three-story structures of like type—this as against 534 frame residences; five large apartment houses have been placed under way, with a total of over 1,000 apartments. Plans have been filed for 143 factory buildings and warehouses, the majority of brick construction, and ten church buildings. The total work as put forward aggregates about \$18,000,000 in new construction, and with the volume of forthcoming operations this aggregate will be swelled considerably before the close of the year. In the city Annex, a new section of the city, construction work is going forward at a strong pace; during the month of September alone, plans for work in this district to cost \$1,209,600 were filed, with the bulk of work of brick type, including two-story residences and factories.

With the strong call for brick at Baltimore, Md., there has come an advance in price during the past fortnight. Good, hard common brick, heretofore being delivered on the job at \$17 per thousand, has moved to \$19 and \$20 a thousand, while salmon varieties are now being quoted at \$16 and \$18. This is an advance of from \$2 to \$4 per thousand over the prevailing prices of last spring. Other burned clay products, such as hollow building tile, partition tile, drain tile, etc., remain at present price levels, with operation under a heavy demand. Building tile is selling from \$67.50 upwards, according to size, and partition tile from \$115 for 2x12x12 inches, to higher quotations for larger size. Fire brick is moving a little slow at the present time, with price level at \$75 per thousand.

A prominent brick man at Baltimore, Md., in discussing

the advancing brick prices, says that the increased cost is due to a large extent to the advancing wages of labor and the problems surrounding this factor of production. Moreover, the enormous demand for the material not only at Baltimore and immediate vicinity, but in neighboring districts for miles around, has brought about a shortage of material and orders are piling up way ahead; with this rapid call from day to day, there is little or no opportunity to accumulate stocks, and the scarcity is likely to continue for months to come.

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Boston Brick Advances in Price

An increase of one dollar, making the price \$20 per thousand, delivered on the job, has been made by brick dealers in Boston during the past fortnight, some dealers asking even more. The increase is due in a measure to the continued labor shortage at the yards which has made it almost impossible for some manufacturers to supply the demand. Inquiry indicates, according to some dealers, that an even greater demand is in prospect and that there will be little difficulty in disposing of all available stocks even at the higher price which had been forecast for some time.

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Medfield Concern Busy Supplying Brick

The American Brick Co., which has a plant at Medfield, Mass., recently has supplied brick for the Banks school house at Waltham, a primary school building at Lexington, a big garage for the United Drug Co. in Boston, a theater in Olneyville, R. I., a government forestry building in Newton and a factory building at Everett for the Boston Fibre Co.

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New Incorporation at Boston

The Boston Standard Brick Co. has been incorporated in Massachusetts with an authorized capital of \$50,000. Frank E. Little is president of the corporation; Frank A. Foster of 85 Dale Street, Roxbury, is treasurer; and E. T. Dunne the third member of the board of directors.

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St. Louis Public Sewers Need Repairs

An appropriation of an additional \$100,000 for repair and maintenance of public sewers in St. Louis will be asked, according to Director of Streets and Sewers, Talbert. Mayor Kiel and Comptroller Nolte advocate the appropriation. This will mean quite a lot of business for contractors and building supply manufacturers, particularly makers of brick and sewer pipe. A demand for an immediate appropriation of \$54,500 for the repair of two sewers has been received and is expected shortly. On September 28 more rain fell in one hour than is the average rainfall for a month. Several sections of the city were flooded and two mains caved in. One cave-in is about 250 feet long, and both must be repaired at once. It is expected that bids on the work, amounting to \$54,000, will be asked for within a few days.

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Steel Situation Hampers St. Louisans

Brick manufacturers of St. Louis are wondering how the decreased production of the steel mills will affect their business. While the majority of the manufacturers are of the opinion that the present supply of steel for building pur-

poses is sufficient for the present season, many fear that building, and consequently their business, will be injured by the situation. St. Louis has a number of big construction jobs racing with time at present, and there is little doubt that these will be seriously handicapped if the steel situation does not show a big improvement soon.

* * *

Good Paving Brick Contract for Someone

The Board of Public Service, St. Louis, Mo., is advertising for bids for the work of widening Washington avenue, from Jefferson to Grand avenue, a distance of ten city blocks. It is expected that work on this improvement will begin in November.

The Good Roads Committee of the St. Louis Chamber of Commerce, in a resolution adopted recently by the board of directors, urges that thoro publicity be given all bids for the sale of road bonds and all awards of contract and specifications for road material and road construction. The committee is anxious that the maximum mileage of durable, hard-surfaced roads may be secured at a minimum cost to the taxpayers.

The resolution also urges that, in view of the expenditure of millions of dollars of public funds, either contemplated in many counties of Missouri or already voted upon, all road contracts should be free from party politics.

Non-partisan boards and engineers of recognized standing and integrity are recommended for the execution of the contracts.

* * *

To Erect Homes for Working Men

St. Louis manufacturers are rallying to the support of the \$2,000,000 housing association formed a short time ago. The association, known as the Home and Housing Association, was organized by the St. Louis Chamber of Commerce and the Commercial Club, and is to be supported by subscriptions from St. Louis industries. The association will erect moderate priced homes to sell to working men on the 20-year payment plan. Stockholders will receive nothing but a fair interest on their money. Six hundred and fifty-seven thousand dollars has already been subscribed. The two civic bodies are prepared to subscribe the stock, but it is believed that St. Louis manufacturers, whose employees will benefit by the association, will subscribe to all the stock.

* * *

October Permits Show Increase

Building this month in St. Louis, Mo., has shown a remarkable increase over September, according to Director of Public Safety McKelvey. Last month 687 permits for buildings to cost \$2,884,980 were issued, against 747 permits, for construction aggregating \$3,352,928 in August. The variation was, of course, due to labor troubles which stopped work for three weeks in September. August was the record month for building permits, however. July's issue of permits was lessened by a controversy between contractors and building promoters with city officials in regard to building ordinances.

* * *

Building Boom Felt in N. J. Cities

Atlantic City, N. J., is feeling the effects of the building boom now going on in the state in a very substantial way, if a single project involving \$20,000,000 can be considered in this way. Plans have been perfected for the

erection of a large addition to the Ambassador Hotel, to double the present capacity; for the erection of a new hotel, to be known as the Ritz-Carlton, to cost about \$8,000,000, and for the construction of a large convention hall. These structures will be located on the boardwalk, and in order to make this possible two hotels and seventeen private residences will be moved to other parts of the city. That large quantities of brick and burned clay products will be used in these structures is a certainty, as well as other ceramic goods, including floor and wall tile and sanitary wares. The Thompson-Starrett Co., New York, will handle the construction.

Construction activities are meeting with a little setback in the Trenton, (N. J.) district thru a number of strikes in the building trades. The local bricklayers are still out, while the plasterers and painters are also asking for an increased scale of wages. With a settlement of differences, as hoped for at an early date, things can be expected to go ahead in a big way, for a number of important projects are now hanging in the balance. The new local hotel, to be known as the Stacy-Trent, will cost \$1,500,000 instead of \$1,000,000, as originally planned; ground for this structure has been broken; it will be located opposite the School of Industrial Arts on State Street. Plans are under way for the erection of a two-story, brick addition to the Rowan School, Broad Street Park, to cost about \$60,000.

* * *

Newark Building Valuations for 1919 High

That Newark, N. J., "knows how" when it comes to construction work is not a matter of just saying so, for actual figures tell the tale, and in an impressive manner. With nine months of the present year now past, a good idea can be obtained as to what has been going on in this important manufacturing center. For these nine months, ending September 30, the total estimated cost of work placed under way is \$10,382,516, covered by 2,233 building permits; the aggregate for the corresponding period in 1918 was \$4,647,519, showing that the present year has more than doubled in building valuations. The big stride forward commenced during the second quarter of the year, or with the coming of the spring season, and it has maintained right along, with increasing volume, since that time. The month of September, just passed, proved a banner period, with estimated costs for plans filed at the building department almost five times those for the same month of last year. The figures stand \$2,436,545, as against \$467,215, for the respective months. This is rather a startling contrast—it explains in a nut shell the big activity in building circles and why the strong call for building products of all kinds. The work under way includes dwellings of various types, industrial operations, office structures and public buildings; housing work is easily in the lead. An interesting feature of the different operations is the permanency of the new work; in the September aggregate, a total of \$1,956,011 in the valuations is for structures of brick or other fireproof materials—and this as compared with a total of \$290,324 for frame structures during the month.

* * *

New Montana Incorporation

The Brick Manufacturing & Construction Co. has been incorporated by Myrtle Weatherhead, Wm. B. Waldo and F. A. Weatherhead, at Billings, Mont., with a capitalization of \$25,000.

FIRE BRICK

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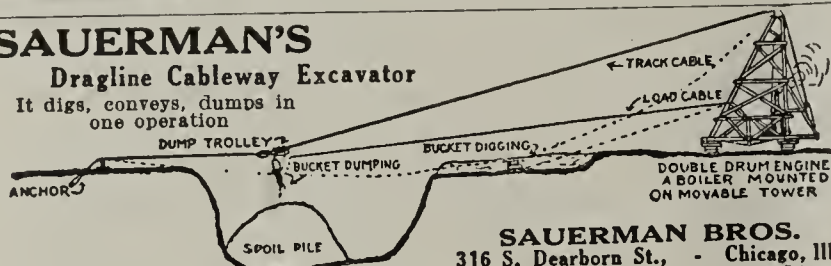
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"I received your Red color and have made about 100,000 fine red brick, and am putting up my first building. Everyone pronounces it the best looking wall in town."

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Milwaukee, Wisconsin

"We use the babbitting over again and do the work ourselves"

"Have been using Nonpareil Anti-Friction Metal for many years, but at first only for babbitting shafting boxes at Dry Press Brick Works. Later tried it for babbitting clay grinder rolls, where we used Bronze metal. Find that it does as well and lasts as long as the Bronze. The Bronze boxes we had to have made, and when they were worn out, had to discard what was left to the scrap pile. Now whenever boxes have to be renewed, we can use what is left of the Nonpareil metal over again and do the work ourselves."

We've got some mighty interesting and valuable data for you. Write us. Trial order solicited.

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Aerial Tramways For Economical Haulage



Manufactured by
BRODERICK & BASCOM ROPE CO.
SAINT LOUIS, MO.

Trent Brick Co. Can't Supply Demands

The Trent Brick Co., Trenton, N. J., has been decidedly active in production thruout the past season. The company is now averaging from 25,000 to 30,000 brick per day, with the labor end handled under the piece work system. This, it is said, is proving the most satisfactory way to handle the situation at the present time, and even so, the labor as available is not fully up to par nor entirely reliable. This plant has two up-draft kilns, with steam and pallet drying systems; considerable new mechanical equipment has been installed in months past and the yard, under the direct supervision of A. W. Goulding, head of the company, is producing at a high point of efficiency. The steam drying racks have a total capacity of from 25,000 to 30,000 brick, while the outdoor pallet system will hold from 45,000 to 50,000 brick. A cable conveyor system has been installed for handling the green material



A. W. Goulding, Head of the Trent Brick Co., Who Is Having His Hands Full Trying to Keep Up With the Demand for Brick.

from the presses to the kilns and thence to the drying departments. The company mines its own clay, having a fine supply quite near the plant; a steam shovel is in operation, with capacity for producing sufficient material in three days to keep the plant operating a week. The price of good, hard common brick from the yard, delivered on the job ranges from \$18 to \$19 per thousand. The call for material has been so brisk that it has been impossible to supply all demands, which may be accountable for the happy smile of Mr. Goulding, who is shown in the accompanying illustration.

Motor Trucks Speed Delivery in N. J. Yards

Brick manufacturing still continues at the seasonal plants at Trenton and Hackensack, N. J. The term for production is now nearing the end and every effort is being made to turn all green material into the finished

product, to allow for stocks for the winter season. The call at both places has been heavy, with constantly increasing volume. The Hackensack production has held its position in popular favor in the northern New Jersey districts, and thousands of brick from the local yards have found their way into this section. Motor truck service has been a big factor in transportation, this being the logical and most economical method of hauling to Paterson, Passaic, Clifton, Ridgewood, Newark and other places in this locality. And the same holds true for the Trenton district, and an increased number of motor trucks have been in use during the months past. The value of this means of transportation from the brick yard to the point of delivery is becoming more and more apparent, and the brick producer who might have been a little skeptical in time gone by has rather changed his mind. Good, hard common brick is \$16 a thousand at the Hackensack yards, with corresponding figure at Trenton. Salmon varieties can be secured for about \$12 and \$13 a thousand.

Housing Big Part Raritan River Activities

The Raritan River section of New Jersey is a busy spot these days. This not only applies in the matter of building construction, which is going ahead at a fine clip, but in the production of the well-known ceramic products manufactured by the different plants in this section. Labor, seemingly, is the one big item which is making for lower production, for manufacturers, with orders piling up ahead, are anxiously awaiting a turn for the better in the labor situation. Regardless of the high prevailing wage scales, good men, women and girls cannot be secured. The General Ceramics Co., the Perth Amboy Tile Works and the Fords Porcelain Works are among the busy plants in the vicinity of Perth Amboy. As to building operations, the big work is in the matter of housing, and a large number of new dwellings are being erected; the demand for homes of all kinds is very keen and there are few available quarters to be had. Among the active men in ceramics in this district is John Pfeiffer, connected with Henry Maurer & Sons, manufacturers of fire brick and burned clay fireproofing materials, and prominent in the local Clay Miners' and Manufacturers' Association. In addition to his numerous duties, Mr. Pfeiffer has accepted the chairmanship of the County Republican Committee, to assist in bringing about the election of Newton A. K. Bugbee, candidate of the party for governor.

N. J. Clay Industry Coming Into Its Own

Building operations continue at an encouraging pace thruout New Jersey. The large cities and the small towns show no indications of slackening in new construction, and the volume of permits filed maintains at a fine status. The fall and winter building work in this locality bids fair to break many records, and it is practically impossible to find a contractor who will take on new work immediately and guarantee time of completion. Minor labor differences in the building trades are being settled rapidly, and but few sections of the state are troubled with any serious strikes at the moment. The construction of new dwellings and apartments is a big feature of work, and every effort is being made to complete structures of this character for winter occupancy—thousands and thousands of homes of all kinds are in course of erection, and New



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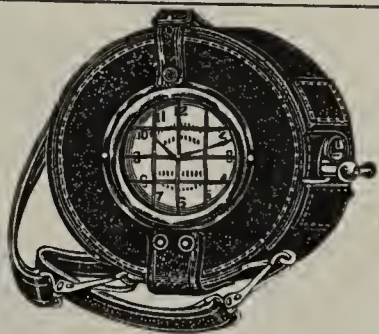
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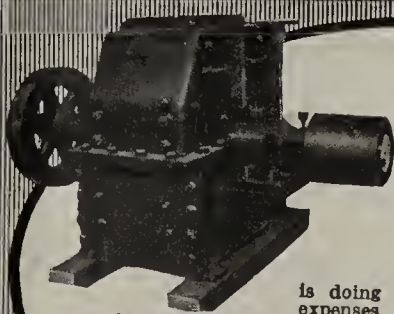
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is being licensed to manufacturers in the U. S. A. and Canada. It has earned the title of "Popular Tile" because it is easy to make, lay and sell, and is liked by the

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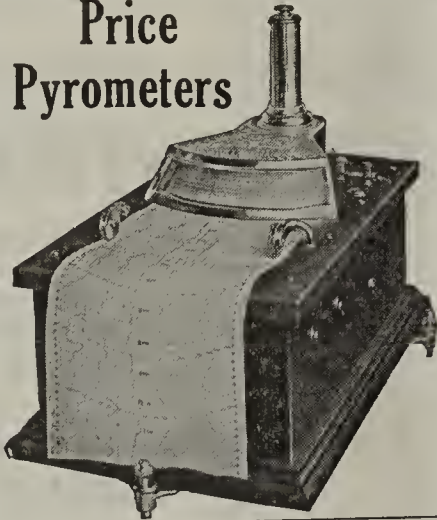
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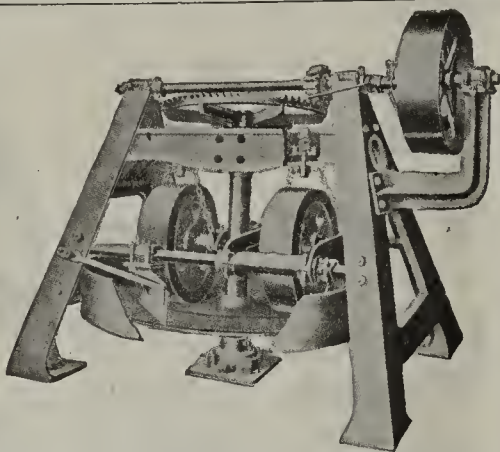
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Brick and Clay Record

610 Federal Street, Chicago, Ill.

Jersey is surely trying to do its share in housing developments; the demand still exceeds the supply, as it is likely to for some months to come, but every week improves the situation. Industrial operations are going forward in good volume and in the larger cities and manufacturing centers a number of good-size projects of this nature are under way. The brick and burned clay industry as a whole is coming into its own in good fashion in these parts. The manufacturers are very busy, with orders stacking up for months to come, while the mason material dealers are also very active. All branches of the trade are feeling the effects of the construction activities.

Bloomfield Clay Co. Making Improvements

The Bloomfield Clay Co., Metuchen, N. J., is making a number of improvements at its properties for increased operating facilities. There is a strong demand for material from these well-known mines, and so strong that the demand cannot be supplied on call, but only in line with receipt of order. Production is handicapped by the labor situation in this district, for it is very hard to secure good men. At the present time, employment is given to about 35 men, and many more could be used to decided advantage were they available. Charles A. Bloomfield, head of the company, is arranging to dispose of his hollow tile plant on the Raritan River, near New Brunswick, which has been closed down for some time past. This plant is located on exceptionally fine clay properties, aggregating about fifty acres, making available large quantities of plastic clay, shale and fire sand. The works previously were used for brick production, in addition to hollow tile, with plant facilities allowing for an output of well over 100 tons of material a day. There are eight kilns with a tunnel dryer, this latter operating under exhaust steam. At one time it was planned to produce paving brick and face brick at the yard, the available clays lending themselves admirably to this character of production.

N. Y. Anticipates Record Breaking Times

New York is again striking its rapid gait in the matter of construction work. A preliminary settlement has been brought about with the bricklayers, and the men have returned to work, pending arbitration of their wage demands; other strikes of more minor character are also coming to a rapid settlement and there is every indication that things will now go ahead in the right way. Building contractors are not only busy with current operations, but forthcoming projects, plans for which are now ready for figures, are developing too rapidly to be handled to the best ends; work is being turned down and no direct promises are made as to completion of where contracts are accepted. In all boroughs of the greater city, the keen demand for homes shows no signs of abatement; dwellings, apartments and other quarters are taken as soon as they are available, and, in the matter of new buildings, before the structures are completed. The Long Island City district is showing up strong in the line of industrial work, and a number of large factory projects are now under way. Manufacturers of burned clay products of all kinds, mason material dealers and others in the trade are keeping pace with conditions as well as possible; that they are busy, rather goes without saying, for there is a strong call for building products of all kinds, and in

this, common brick is taking a firm position in the lead. The outlook for the fall and winter building season is most encouraging, and if labor holds steady, some record-breaking times can be anticipated.

New Jersey Brick Bringing Good Prices

The good call for brick and other burned clay products continues thruout New Jersey; there is apparently no let up in sight, and producers, as well as dealers are not thinking of this end—they are riveting attention on keeping up with current demands. Prices hold strong at present levels, and there is no evidence of any decline, rather an inclination to move upwards. Stocks are being maintained at the best possible status, and Hudson River common brick is being secured and used freely at different points in northern New Jersey; quite a few barge loads have reached this district during the past fortnight. At Newark, good brick is obtainable from \$19.50 to \$20 per thousand, delivered on the job. With closely similar figures at Paterson, Passaic, Jersey City, Hoboken and other places in this vicinity. In the southern part of the state, the figure is a dollar or two higher, or from \$21 to \$22 for desirable stock. Hollow building tile is in good call, with price range from \$100 upwards, according to size. Face brick is coming into its own in an encouraging manner, with selected material selling from \$40 to \$50 per thousand. Enamel brick, American size, is quoted at \$100 per thousand in the different localities, and fire brick No. 1 Standard, is selling from \$63 and \$65 to \$70 per thousand.

Columbia "U" to Run Fire-Testing Station

As an extension to its research work, Columbia University, New York, has arranged to take over the fire-testing station at Greenpoint, L. I., the largest plant of its kind in this part of the country for the testing of fireproof building materials. This plant, consisting of two buildings with equipment, was established about twelve years ago by Ira H. Woolson, at the present time consulting engineer to the National Board of Fire Underwriters of New York, and has been conducted as a private enterprise. All further tests will be made under the supervision of members of the college civil engineering faculty, in cooperation with officials of New York City. The tests will be made in accordance with the local building code, and it is planned to devote considerable attention to partition and other structural work. In this connection, a series of experiments will be conducted to ascertain new and cheaper fire-resisting construction materials for different features of building erection. The station has been of great advantage to the city in the past in the establishment of proper building regulations for fireproof structures.

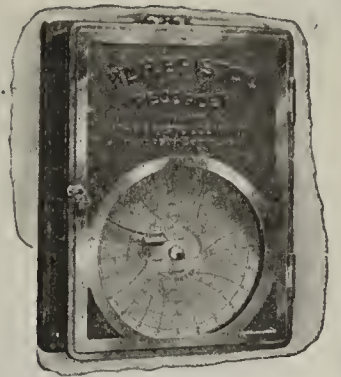
Price Levels Raised in New York

The heavy demand for common brick, burned clay specialties and other building materials at New York, has gone to raise price levels, and during the past fortnight some few important fluctuations have occurred. Common brick holding for months past at \$15 per thousand in wholesale lots, alongside dock, advanced to \$15.50, and is now ruling at \$16, and with no slack in demand; it is said that the price is likely to go higher, altho manufacturers are seeking to maintain the figure at this point. The dealers' prices, heretofore prevailing at \$18.15, now show

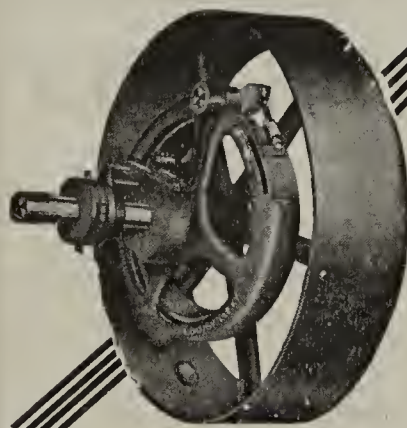
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HERE'S A GOOD ONE

Recently our Buffalo representative sent us a report, which on second thought we believe will interest every clay manufacturer. Having called on an agent for sprocket chains made by a competing firm, our man reports that "he acknowledges, although a _____ agent, that for some of his work there is nothing to compare with UNION CHAIN under 'grilling conditions.'" All of which shows that even our competitors concede the superiority of UNION CHAIN.

If there are "grilling conditions" in your plant, we would welcome the opportunity to prove the many advantages of using UNION STEEL CHAINS.

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Its Strength and toughness
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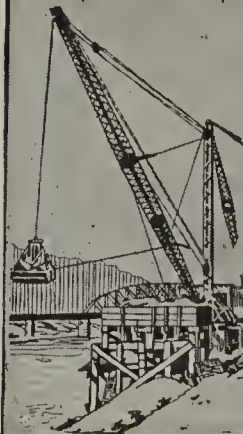
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In our Foundries and Machine Shops we are prepared to furnish Dryer Cars, Clay-workers' Castings, and Dies of all kinds for sewer pipe press and machines, etc.

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Face Brick Wanted

Our prestige, responsibility, and reputation for service is bringing us more orders for high grade artistic Face Brick than we are able to furnish, although we already represent in Texas, which is a mighty big state, many of the leading manufacturers of the country.

If you are not already satisfactorily represented in this field and have anything to offer for shipment this winter, look up our financial rating and send us your samples with f. o. b. plant quotations, and we can make the connection worth while to you. We manufacture no face brick ourselves.

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indications of reaching around the \$19 mark, and it is doubtful if the figure will remain at this level, with continuance of present strong call. Brooklyn is maintaining its lead in the matter of sales, and a large number of barge loads are being sent to this borough to supply the demand. Face brick is operating under active call, with evidence that prices will advance a few dollars as the days go by, reaching a \$50 level for stocks that have been selling for \$46 and \$48. Good selections are still obtainable at \$42 and \$45 and this is the popular material for the bulk of operations. Hollow tile for interior work, including sizes from 2x12x12 inches to 6x12x12 inches, is in good demand, with prices ranging from \$63.75 to \$153 per 1,000 square feet, delivered on the job, for the two sizes noted. Fire brick holds at slightly over \$60 per thousand.

Hudson River Brick Selling Fast

The Hudson River brick manufacturing plants reflect the activity now evidenced in the New York brick market. Large shipments are being made from the different yards, and during the past fortnight 54 barge loads arrived in the greater city; this is approximately 21,000,000 brick, giving an idea of the rapid consumption at the present time. The first brick of the present season has made its appearance in the New York market, the former shipments embracing production from the 1918 season, as well as hold-overs from 1917. With the manufacturing season drawing to an end, every effort is being made to stock up the yards for spring shipments next year, and with the activities of the past few months it is likely that a good reserve will be accumulated. It is said that a number of plants will attempt to operate as far into the winter as possible, and in fact, thru the cold weather, if the season remains "open" and no long zero spell is experienced.

Faience Tile Used Lavishly

An effective use of faience tile has been made in connection with the new store of the Rival Shoe Co., on Nassau Street, New York. Material of this nature, of attractive blue color, has been used for the entire front of the establishment, extending from the sidewalk to the top of the second story, and covering all window frames, transom bars, etc. The structure stands out in a prominent way, attracting immediate attention.

Cleveland Building Supply Business Being Investigated

About a year ago "Campaign" was a good word to use almost every day. When anything was about to be done, it had to be accompanied with a campaign. A brief year changes words, as conditions, and now in Cleveland there is the already recognized good standby: "Investigation." Every day, almost, a new investigation of something or somebody is started in Cleveland. Whether it is ever finished, or, more important, whether it ever gets anyone anywhere, is another thing again, Mawruss.

Be that as it may, the building supply business in Cleveland has its inning now, and is being investigated. Said present investigators are bunching the business, and include clothing and things with the investigation of the building supply business. County Prosecutor Doerfler is the chief investigator this time. The festivities started on or about October 8. Nothing has been heard since. But then it is

admitted that it might take a full month "to sift things to the bottom."

Among other things the investigators are seeking to do is to determine whether there is a combination in control of building supplies, etc.; whether increases in prices are "natural" or "unnatural"; to call a grand jury to "investigate" and punish violators; to reduce the prices of building material, if possible, and thereby reduce the price of rent. Very good, Eddie.

But what do those who ought to know most about it say?

"The Material Dealers Association and the Builders Supply Board of Cleveland are inactive and waiting results of the investigation," says C. H. Patterson, secretary of these organizations. "They are sitting still, and saying nothing until called upon to do so. It would be a fine thing if this investigation, different than others, were to reduce the cost of materials. Investigations in the recent past are not noted for having brought down prices. The political nature of this investigation spoils its moral effect. Prices are a matter of supply and wages anyway. No investigation has yet been able to beat that combination."

Says O. R. Leach, service manager, the Hydraulic-Press Brick Co.: "Prices of building materials are based upon cost of production. I guess it is safe to say that the brick interests would be tickled to death over this investigation, because that is what it is likely to show, if anything."

Finally, remarks Bob Mitchell, Cuyahoga Builders Supply Co.: "Actions speak louder than words. Investigation is about threadbare in this town by now. It might be a good idea to have the investigators investigated for a change. Might learn something. Can't tell."

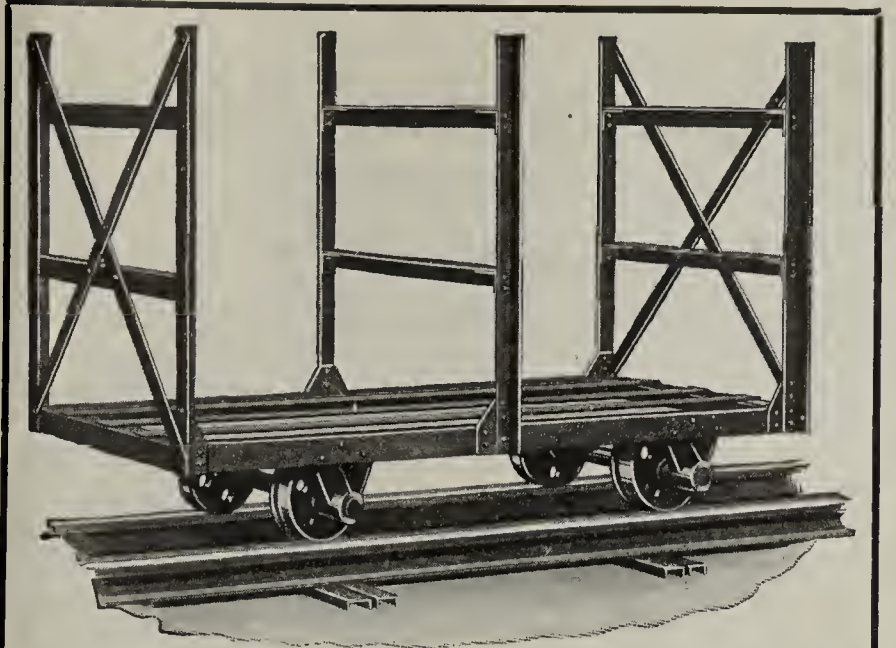
Meanwhile the investigation is investigating. Ho, hum.

Recently Organized Firm Expanding

Plans for the distribution of the product of the Independent Brick & Tile Co., Cleveland, Ohio, recently organized by Herbert F. Geist, head of the Geist Building Material Co., were completed recently, and expansion of the business is already in progress. The latest step has been the absorption of the American Face Brick Co., of which H. F. Kemper has been manager. Mr. Kemper will be sales manager of the Independent. The absorption, according to Mr. Geist, was made in order to facilitate the distribution of face brick. Actual construction of the Independent plant is expected to start before the end of October. Kilns and equipment now are being negotiated for. First unit is expected to be turning out 200 tons of brick a day by spring, and 25,000 of 5x8x12 tile. Soft shale will be the material used. Mr. Geist and Mr. Kemper will be active in the management and distribution angles of the business. Mr. Geist, beside his two business interests, is also president of the Builders Supply Board of Cleveland and a director of the National Builders Supply Association. Mr. Kemper has long been identified with the face brick end of the industry in Northern Ohio.

The company has acquired about 30 acres in the southern part of the city on the Wheeling and Lake Erie Railroad. It is adjacent to clay of a good quality, in quantity sufficient to last forty years, it is claimed. In addition to producing for Cleveland consumption direct, a big business is expected to be done with independent dealers in this city.

Officers of the company are: President and general manager, Herbert F. Geist; vice-president, C. J. Neal; secretary, William Thomas; treasurer, H. G. Renker. Directors include the above and Harry R. Beagle, president, Cannelton



LARGER capacity and lower service-cost in Dryer Cars are the result of correct designing for individual plants.

Conkey Dryer Cars having these advantages, combined with expert workmanship and the best materials, are the ideal equipment for your plant. Write for descriptive booklet.

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DOES YOUR PROFIT GO UP IN SMOKE?

Canton Rocking and Dumping Grates in your plant mean a large saving in fuel, or a greatly increased production with the same amount of fuel. By improving combustion, they make a coal saving of at least 10% in comparison with stationary grates. Peak loads can be maintained easily. If you are interested in cutting down fuel cost and improving combustion, write for Bulletin B. Form 14.

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CANTON GRATES SAVE FUEL FOR BOILERS FOR KILNS

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Of Every Description

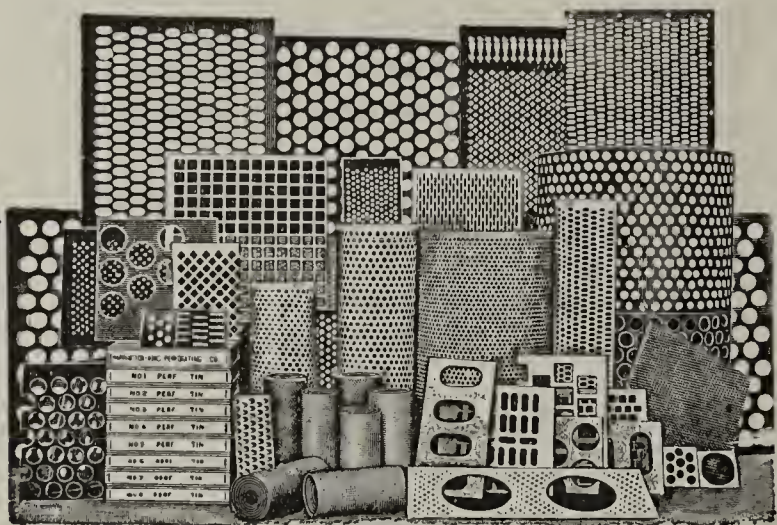
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Gravel, Stone and Cement

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if you treat your clay with

R. H. Precipitated Carbonate of Barytes

You can safely guarantee that your brick
will be

Scum-Proof

You can get a higher price and influence
architects to specify your product because
Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's de-
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*We have a complete line
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Coal & Clay Co. and secretary, Beaver Clay Mfg. Co.; Paul Cleland, director, U. S. Copper Products Corporation and the Euclid-Prospect Corporation; A. L. Goldman, secretary and treasurer, Builders Supply & Fuel Co.; B. W. McCausland, Jr., sales manager, United States Gypsum Co.; A. Soros, building contractor; Frank Strock, Van Aken & Strock, real estate; David W. Teachout, vice-president and treasurer, A. Teachout Co.

Strong Prices Maintain in Ohio

There is still a good demand for common brick in Ohio territory and all of the common brick plants are working with as full a labor force as possible. Labor, however, is still scarce and the net result is to reduce production. Common brick in Columbus sell from \$15 to \$18 delivered on the job.

Face brick prices in Ohio territory and more especially in the Hocking Valley producing field are exceptionally strong. All changes are towards higher levels and some advances have been announced during the past month. Face brick sell from \$25 to \$38 at the plant, depending on quality.

The best feature of the face brick business in Ohio territory is the better car supply which is helping in making shipments. The car supply previously had been quite bad and a lot of inconvenience was caused by lack of cars. With the steel strike on, the situation is improved and manufacturers as well as jobbers are taking advantage of the better supply to get caught up on their orders.

Cleveland Car Situation Cleared Up

Improvement in the car situation, which will be a great aid to cleanup of present building operation before cold weather sets in, has developed in the last two weeks, according to R. L. Queisser, head of the R. L. Queisser Co., Cleveland, Ohio, who has been looking into this phase of the industry in the interest of brick distributors. "We now have about 75 per cent. of the cars needed in the Cleveland district," said Mr. Queisser. "This is largely due to the steel strike, which is helping to release much rolling stock. There is no falling off in demand, however, as most contractors are seeking to get under cover before the real winter arrives."

Contracts for 432 Miles Highway Awarded

According to a report recently made public by A. R. Taylor, Ohio highway commissioner, there were contracts for 432 miles of improved highways awarded in Ohio during the present year. The cost of this improvement was \$13,489,429. A total of thirty-two more miles at an estimated cost of \$1,065,219 will be awarded soon. Of the 432 miles so placed under contract 86 miles are to be paved with plain concrete; 74 miles with reinforced concrete; 77 miles with brick; 18 miles of bituminous concrete; 70 miles of water-bound macadam, and 99 miles of bituminous macadam.

Construction Work in Columbus Booming

Building operations in Columbus continue to show remarkable records according to the report of the Columbus building inspector covering the month of September and for the first nine months of the year. The report shows that during September 332 permits were issued for new structures to cost \$625,980 as compared with 169 permits

and a valuation of \$261,155 in September of last year. For the nine months in 1919 the department issued 2,677 permits having a valuation of \$4,768,260 as compared with 1,491 permits and a valuation of \$2,324,125 in the corresponding period in 1918. These reports do not cover the many suburbs of the Buckeye capital which are increasing rapidly and in which many new dwellings and apartments are projected. It is believed that there is much construction work on dwellings going on outside of the city limits as there are in the city.

V. P. M. A. to Establish Office at Columbus

Columbus, Ohio, has been selected as a location for one of the branch offices of the Vitriified Pipe Manufacturers' Association of America, according to John L. Rice, field commissioner of the association. Mr. Rice, who makes his headquarters in Akron, was in Columbus recently looking over the situation. The national office will be moved soon to Philadelphia according to Mr. Rice. The association embraces seventeen states, extending from Indiana to New England and south to Virginia. Branches will be established in several state capitals.

R. R. Asks to Decrease Its Rates

The Erie Railroad Company is seeking permission to decrease its freight tariff on brick and related articles in carload lots from Greenford, Ohio, to Columbiana, Lisbon, Leetonia and Washingtonville, Ohio. The present rates on brick from the point of origin at $7\frac{1}{2}$ to 8 cents per hundred, and a reduction to a range of from 4 to $5\frac{1}{2}$ cents is desired. Hearings are scheduled to be held in October, and from the fact that a reduction in the rate is asked, it is believed no opposition will develop.

Labor Situation Still Acute in Ohio

The labor situation at the Ohio plants has not improved recently and as a result few face brick plants are operating at more than 60 per cent. of their capacity. In fact, it is believed that if the exact truth was told 50 per cent. output would be more correct. Under these conditions it is impossible to accumulate any reserve stocks and there is still a scarcity in all sections.

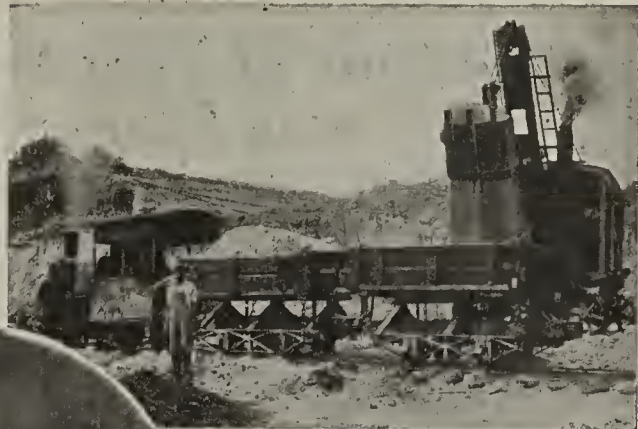
Brick Company Opens Cooperative Store

The Claycraft Brick Co., Columbus, Ohio, has opened a cooperative store for its workers at Shawnee, Ohio. The store is managed by a club, formed by the employes of the concern and starts off with bright prospects.

Philadelphia Building Operations Decrease

The labor difficulties at Philadelphia, Pa., including the strike of bricklayers, have not as yet been settled, with the result that building operations, progressing in such an encouraging manner a few weeks ago, have been brought to rather a quick halt. The consequence is that the month of September shows a decrease of about \$750,000 in the estimated valuation of current work, as compared with the month of August, when operations rounded out to the total of \$6,019,560. Notwithstanding this handicap to desired activities, the first nine months of the present year show a gain of \$26,596,940, as compared with the corresponding period of 1918. The total work up to September

The "A" ERIE weighs 13 tons. Rated capacity, 30 to 40 cu. yds. per hour.
The "B" ERIE weighs 20 tons. Rated capacity, 50 to 60 cu. yds. per hour.
These rated capacities are often exceeded.



"We are highly pleased with our investment"

"We congratulate you on having put on the market such a labor saver and efficient worker as the ERIE Shovel. We are highly pleased with the machine installed in our pit—very well satisfied with our investment." Letter signed by J. S. Bone, President Oconee Brick and Tile Company, Milledgeville, Ga.

Just one more sample of the letters that we are receiving from Clay Products manufacturers all over the country.



Serves either as steam shovel or as locomotive crane, with clamshell bucket.

They prefer the ERIE Shovel because of its large capacity—they appreciate the ERIE most when there is a rush demand for raw material. And the ERIE is reliable. Let us send you full information. Write for a copy of our Bulletin B.

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Builders of ERIE Shovels and Cranes; BALL Engines.

ERIE Revolving Shovels



MORSE DRIVES

Flexible as a belt

Positive as Gears

Longer life than either

Our engineers, experts in the art of designing chain drives, will gladly call and assist in solving any power plant transmission problem without obligation.

We are always glad to furnish special information pertaining to our field, and welcome inquiries.

Send for INFORMATION
Address NEAREST office
FACTS will Surprise You



MORSE CHAIN CO.

Ithaca, N. Y.

ASSISTANCE FREE

Cleveland
Chicago
Boston

New York
Greensboro, N. C.
Detroit

Pittsburgh
San Francisco
Atlanta

Montreal
Minneapolis
St. Louis



"MORSE" is the guarantee always behind our Efficiency, Durability and Service

The Cost of Your Belt Slip at a Glance

In other words column B at the right shows how much money Cling-Surface will save.

For example, if you spend \$10,000 per year for fuel and if all the power developed is sooner or later transmitted through belting, column B shows that \$300.00 can be saved by stopping slip.

In this scale 5% slip is assumed, which is a very low assumption. If all power is transmitted through a main belt and the main belt slips 5% THE ANNUAL PREVENTABLE LOSS IN THAT ONE BELT IS \$300.00.

Power is often transmitted from the main shaft to the second shaft, from the second shaft to the third shaft, and so on. This loss multiplies until the total often amounts to 10, 15 or 20% of the yearly cost of the fuel.

The cost of Cling-Surface is practically "zero" when compared with the money it saves.

Cling-Surface doesn't make belts sticky—it makes them pliable. It lubricates the inner fibres. It permits nice, easy, slack running.

Applicable to all kinds of belts and rope drives—cotton, leather, Gandy, camel hair, Balata, and even rubber.

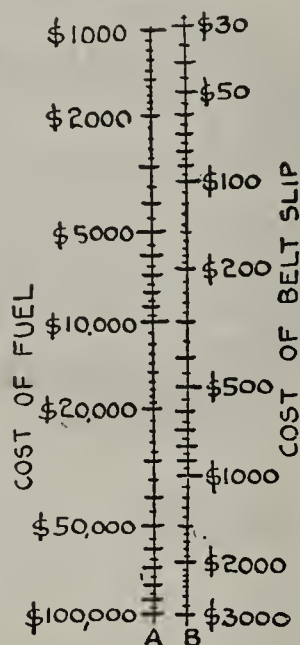


Cling-Surface Company

1029 Niagara Street

Buffalo

New York



30, aggregates \$39,860,760. This shows the magnitude of some of the local work and it is confidently hoped that the labor situation will be righted to permit "full steam ahead" at an early date. Many important projects are ready to be launched, and architects and engineers are busy. Moreover, there is an urgent call for housing accommodations, similar to that prevailing in other important cities of the country, and work of this character must go ahead—it is vital to the welfare of the community.

With this decrease in building operations there has come a slack in actual orders for brick and other basic building products. At the same time, the calls for estimates of costs are encouraging in showing the general trend of sentiment, and it is expected that a big demand will ensue for building materials of all kinds when the situation is cleared. Prices remain firm, showing in general no fluctuation in either direction. Good, hard common brick is selling for \$19 per thousand from the local yards, delivered on the job at different parts of the city; salmon brick can be secured for about \$15 per thousand, while second-hand material has also been moving quite freely for approximately the same figure for a load of about 1,500. Fire brick is holding well at \$70 per thousand for good grade material, while face brick is being quoted from \$35 and \$40 per thousand upwards, according to selection. Clay partition tile, from 2x12x12 to larger sizes is selling from about \$85 per 1,000 square feet upwards.

Brick Men Keeping Pace With Call

There is a good demand for brick and burned clay building products thruout eastern and central Pennsylvania, and manufacturers are keeping pace with the call. The brick plants in the vicinity of Allentown are busy, with prices ranging close to \$15 per thousand for good, hard common brick at the yard. The season has been a fair one for production, but active call has not permitted any great accumulation of stocks.

Night School to Make Bricklayers

The Mason Builders' Association, Philadelphia, Pa., is planning for the establishment of a night school to teach boys and young men the bricklaying trade. The movement is being developed in connection with the present strike of bricklayers in the city, in order to obtain labor for local operations, rather than meet a demand of \$1.25 an hour.

Locates Fine Deposit of Fire Clay

The Amalgamated Coal Co., Pittsburgh, Pa., has located a fine deposit of fire clay on its properties, aggregating about 1,500 acres in Somerset County, and it is planned to develop this production to highest efficiency. L. J. Dawes is president.

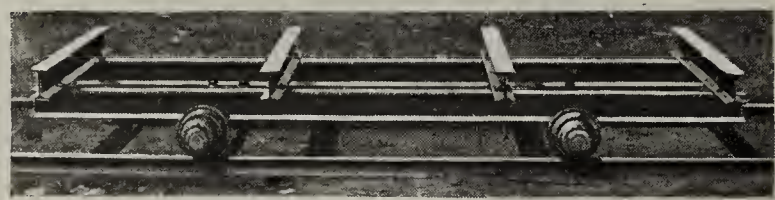
Will Develop Housing Projects

The Chamber of Commerce, York, Pa., is arranging for the formation of a community corporation to develop housing projects in this section to meet the local demand. Max Grumbacher, president of the chamber, heads the movement.

Canadian to Have Common Brick Plant

W. D. Fisher contemplates building a common brick plant at Canadian, Tex.

Can You Use Cars Like This?



36 inch gauge, roller bearing wheels, steel or wood frames

IF you can use these you will save considerable money as they are being sold as surplus equipment, ready for immediate delivery, at very low prices. They are guaranteed to be in good serviceable condition. Address

Sales Department 75

Du Pont Chemical Co.

Incorporated

Wilmington, Delaware

New Incorporation for Roanoke

The Roanoke Brick & Tile Co. has been formed with a capital stock of \$50,000. J. T. Bandy has been elected president of the corporation and L. E. St. Clair secretary. The company has its main office in Roanoke, Va.

What Canada is Doing

Canadian production is hitting a high mark—with every appearance of going higher. During the month of August of this year, the exports from the Dominion aggregated \$116,564,792, against \$90,153,888 during August of 1918; this is an increase of over \$26,000,000, or about 30 per cent. In this same month, the imports totaled \$81,357,485, as compared with \$79,652,526 in August, 1918, only slightly more than \$1,000,000, or approximately 2 per cent.

These figures show a swinging of the trade balance, and this balance, as compared with August of a year ago shows an improvement of about \$25,000,000, or approximately 235 per cent. This is moving in the right direction; *Brick and Clay Record* predicted in these columns a few months ago that our Canadian brothers would soon be up and doing, and would bear watching—and it is coming to pass.

No opportunity is being lost to maintain production at a high status—just what the United States needs, but what the United States isn't getting. Canada is advancing rapidly in her exports; with a total of over \$64,000,000 in April, this was increased to over \$92,000,000 in May; then it receded to around \$87,000,000 in June, stepping up again to over \$113,000,000 in July, and with the August figures as noted. Now as to imports, in April, these totaled around \$54,000,000, advancing to \$71,000,000, approximately, in May, to \$75,000,000 in June, to \$84,000,000 in July and falling back a little in August, as noted.

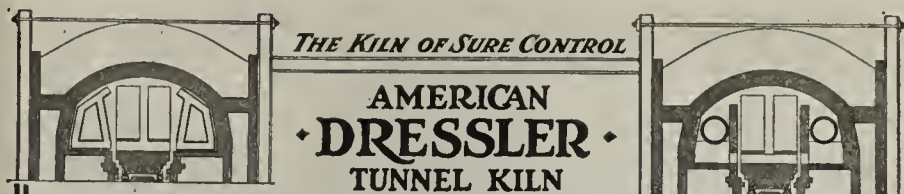
But, every month is showing an increase in the trade balance, and this is but another term for country prosperity. We want to watch our good neighbors, just as they want to watch us, for incidentally, Uncle Sam's trade balance doesn't look bad—about \$119,000,000 greater in this same month, August, than in the corresponding month for last year. At the same time, a cessation of strikes and labor difficulties will lend betterment and improvement in the situation; and top-notch production will give us a chance to catch up.

C. N. C. P. A to Meet Jan. 27, 28 and 29

Toronto clay products manufacturers have extended an invitation to the Canadian National Clay Products Association to hold their next meeting in Toronto. At the meeting of the executives on October 1, this invitation was accepted and January 27, 28 and 29 were selected as the dates of the eighteenth annual convention. Already a committee under the direction of C. A. Miller, is at work and all attending the convention will be given a good time. President Burgess has sent out a letter to members asking them to make the date known generally. He asks clay products men to make this convention a big after-the-war reunion and make it a regular old time "bang-up" convention.

Oldest Pottery in York Co. Destroyed

The Humberstone Pottery Works, Newtonbrook, Ont., has been destroyed by fire. This pottery was one of the oldest in York County and was one of the landmarks of the district. The pottery was the property of T. A. Humberstone and formerly belonged to the late Simon Thomas Humberstone,



PENNY WISE AND POUND FOOLISH

is the man who continues
to pay more to

BURN BAD PRODUCT

than to

BURN GOOD PRODUCT

American Dressler Tunnel Kilns, Inc.

171 Madison Avenue

New York City



Bituminous COAL Particularly Adapted To Burning Clay Ware

INDIANA BLOCK

Three Operations in Clay County, Indiana, on Monon R. R. Capacity, 3,000 Tons per day.

INDIANA Number 4

Three Operations in Green County, Indiana, on Monon R. R. Capacity, 3,000 Tons per day.

Both burn with long flame, are very low in sulphur, and leave a flaky ash.

Tell us your requirements

POWER COAL COMPANY
FISHER BUILDING :: :: CHICAGO

Traction Building, Indianapolis, Ind.
Terre Haute, Ind.

Rossendale-Reddaway

FABRIC BELTS
for
EVERY
SERVICE



"Right" vs. "Nearly Right"

When it comes to belts you can put one kind of a belt on all the drives in your plant and make it do. No two drives are exactly alike, but a belt that is "nearly right" will turn the pulleys after a fashion.

It is wise to buy from one belt manufacturer, whose quality of material and skill, born of long experience in belt making, you know will give you a belt you can depend upon. But for that one manufacturer, select the firm whose line is extensive enough to furnish the right belt for the particular conditions of your drive. The opportunity, afforded by the Rossendale-Reddaway line of fabric belts of every type, for you to select the right belt for the drive, makes all the power of your prime mover available with the least maintenance and insures continual, satisfactory service.

Ask our engineering department for recommendations for your difficult drives. Their advice is competent—and free.

The Rossendale-Reddaway Belting and Hose Company
Newark, N. J.
Export Dept., 26 Cortlandt St., New York City

SINCE 1890
SOLE MAKERS OF
CAMEL BRAND BELTING
REG. U. S. PAT. OFF.
IN THE U. S. A.
2003-R

whose father established the business about 1798. The plant has been idle since 1914, but the owners were preparing to reopen it for manufacture of pottery.

Jos. Russell Withdraws Candidacy

Joseph Russell, M. P. P., has decided to retire and will not be a candidate at the coming Ontario legislature elections.

Enormous British State Housing Subsidy

Of the half million houses called for in the British Government's housing scheme within the next three years, between 7,000 and 8,000 are already under construction, while plans are being submitted for 80,000.

The hope has been expressed by a British Government official, says the American Chamber of Commerce in London, that 100,000 would be built by the end of 1919. The total expenditure is estimated at \$1,675,000,000 for the half million dwellings, and is based on the present average figure of \$3,350 per house.

In spite of the tendency for building costs to increase, this figure will not be exceeded. The average rent charged will vary according to local conditions; the local rate payers will bear as much of the loss as is covered by a two cents rate, the tax payers meeting the rest of the bill.

Wider Roads For Rural Districts Started in Indiana

Latest examples of wider roads in country districts, a move that has been advocated by the officials of the National Paving Brick Manufacturers' Association, with headquarters in Cleveland, Ohio, were inspected during the last week of September by a joint committee representing county commissioners of Indiana and national motorists representatives, in connection with a meeting of the County Commissioners' Association of Indiana, and members of the Motor Clubs of Indiana, held at Indianapolis. Representatives from the National Paving Brick Manufacturers' Association from Cleveland included Vice-President Will P. Blair and Secretary Maurice B. Greenough. The meeting was addressed by George Dehil, chairman of the Good Roads Board of the American Automobile Association.

Inspection of the roads included the new improved highways in Marion County. These are among the best illustrations of brick highways in the country, in the opinion of paving brick interests who were present during the inspection. There are 30 foot roadways, running out of the city of Indianapolis. The width, it was explained, has been adopted to meet the need for a three-way road, a need which has long been advocated by all road interests, and especially in thickly populated districts. The visitors were told that these roads are the forerunners of many such improvements planned for the near future.

Another speaker at this meeting was Captain Mandigo, chief engineer of the Western Paving Brick Manufacturers' Association, who explained methods of brick paving construction in the Middle West.

As has been previously stated, the state commissioners of Indiana have as yet done nothing toward ordering brick in connection with such road improvement as comes under their jurisdiction. At this meeting nothing was done toward inducing them to change their attitude in this connection. However, it is expected that the activity of the county commissioners in their respective territories in specifying brick highways may awaken the state commissioners to the public preference for this material.

There is Only One Jenkins Valve

—it bears the Jenkins
"Diamond Mark."



There are Jenkins type and so-called Jenkins Valves that are often sold for Genuine Jenkins Valves.

The only valves that can be truthfully called and lawfully sold as Jenkins valves are made and have been made for over 50 years by Jenkins Bros. They are distinguished from imitations by the Jenkins "Diamond Mark," which is cast on the body of every valve.

For your protection, demand this mark—look for it.

Jenkins Valves are made of brass, iron and steel in types and sizes to meet all requirements—they are sold by supply houses everywhere.

JENKINS BROS.

New York Philadelphia Chicago Boston Montreal London

Jenkins Valves

2069-J

Does Your Truck Equipment Fit Your Local Transportation Problems?

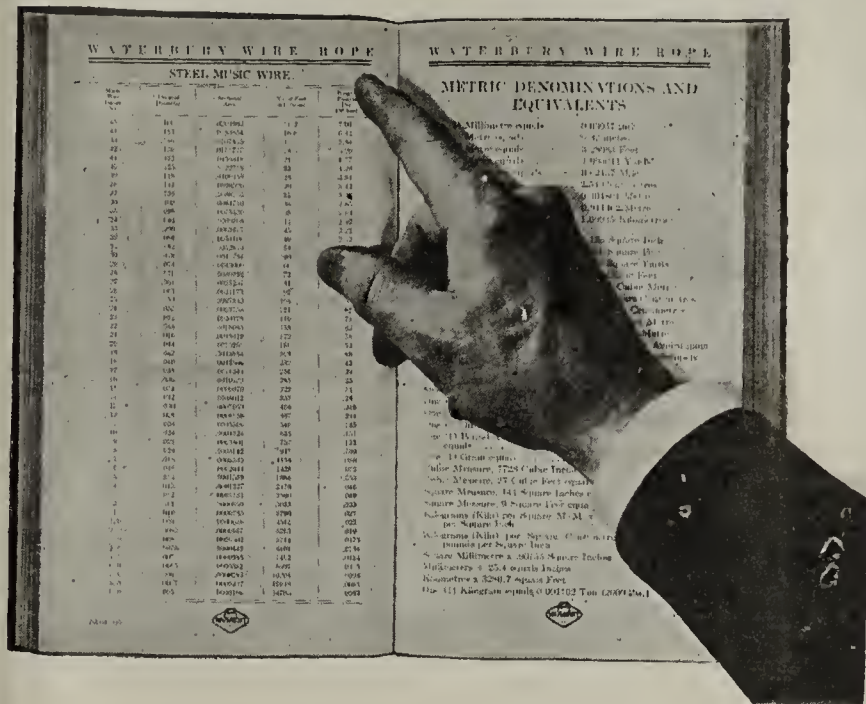
It will more than pay every concern employing motor trucks to make doubly sure that its truck equipment fits local transportation problems and is fully equal to meet all transportation demands.

When he has the right sized and kind of motor trucks, the owner is securing the very lowest cost per ton mile for delivering or hauling his goods or materials. But when he has the wrong kind of truck equipment his cost of transporting goods or material is greater and the difference between this overcost and what he would pay if his equipment fitted his demands, represents an unnecessary loss.

86 Per Cent. of Business Failures in the U. S. Due to Individuals

Bad luck in business lies not so much in the stars as in the business man himself, according to business statisticians. Eighty-six per cent. of the business failures in the United States in 1918 were classed as due to the individual while only fourteen per cent. were assigned to outside causes. Among the factors of the eighty-six per cent. of failures compilers of figures numbered extravagance, lack of capital, and speculation outside regular business.

WATERBURY STEEL MUSIC WIRE



From the smallest Waterbury steel music wire with a diameter of half a hundredth of an inch, to the largest, 32 times that size,* the accurate drawing, uniformity of stock and correct tempering are just what you would expect of Waterbury quality. And quality is the only economical basis on which to select music spring wire. "Peerless" is the Waterbury brand. Look for both names on the roll.

WATERBURY COMPANY

63 PARK ROW, NEW YORK

Chicago 1315-1321 W. Congress St.
San Francisco 151-161 Main St.
New Orleans 1018 Maison Blanche Bldg.
Dallas, Tex. A. T. Powell & Co.

*The Waterbury Rope Handbook is not only a complete manual on all kinds of rope, but also contains a section on music spring wire—tables and other data. Ask for a free copy. It will be mailed promptly.

2328W

Statement of the Ownership, Management, Circulation, Etc., Required by the Act of Congress of August 24, 1912.

of "Brick and Clay Record," published Bi-weekly at Chicago, Ill. for October 1, 1919.
State of Illinois } ss.
County of Cook }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Edwin G. Zorn, who, having been duly sworn according to law, deposes and says that he is the Editor of the "Brick and Clay Record," and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:
Publisher: Kenfield-Leach Company.....Chicago, Ill.
Editor: Edwin G. Zorn.....Chicago, Ill.
Managing Editor.....None
General Manager: H. H. Rosenberg.....Chicago, Ill.
Business Manager: David B. Gibson.....Chicago, Ill.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent. or more of the total amount of stock.)

F. B. Cozzens.....610 Federal St., Chicago, Ill.
H. H. Rosenberg.....610 Federal St., Chicago, Ill.
S. J. Leach.....610 Federal St., Chicago, Ill.
L. W. James.....610 Federal St., Chicago, Ill.
F. J. Sauer.....610 Federal St., Chicago, Ill.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state).....None

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

Edwin G. Zorn.

(Signature of editor, publisher, business manager, or owner.)
Sworn to and subscribed before me this 24th day of September, 1919.

Catherine C. Judge.

My commission expires Nov. 28, 1922.

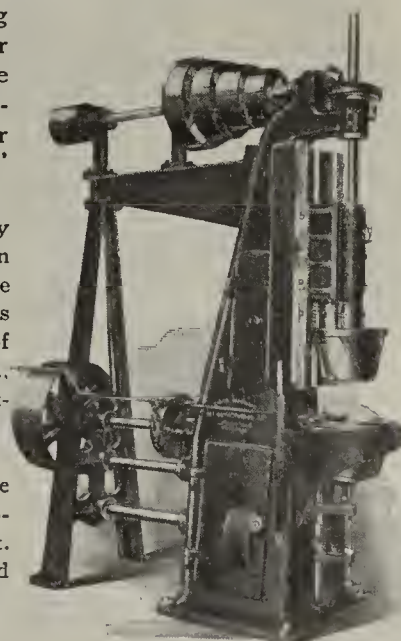
Doesn't know how he got along without it

After two years of satisfactory service with a Baird Pottery Machine, Mr. A. Hupprich, manufacturer and dealer in flower pots, Detroit, Michigan, installed another Baird Machine to take care of the increased business.

Mr. Hupprich has found both of these machines to be very profitable. "In fact," he writes, "we do not know how we ever got along or made money before we started using them. There are no other machines made, that we know of, which can compare in either speed or quality to these machines."

This letter is only one of many that illustrates the profit in manufacturing flower pots. The latest Baird Pottery Machine is adapted to the manufacture of Stoneware, Runner Brick, etc., for which there is a big, profitable market.

It will pay you to investigate what this machine can do toward increasing your profit. Why not write today and send along a sample of your clay?



BAIRD MACHINE & MFG. CO.
265-69 Jefferson Avenue, Detroit, Mich.

"We have been using at our two factories for the past year, Barium Carbonate made by the Rollin Chemical Company. This material is used to prevent scum and has proved entirely satisfactory."

THE UNITED STATES ROOFING TILE CO.
5-15-18

IMPROVE YOUR WARE

It can be done by the use of Rollin's Barium Carbonate because it eliminates scum.

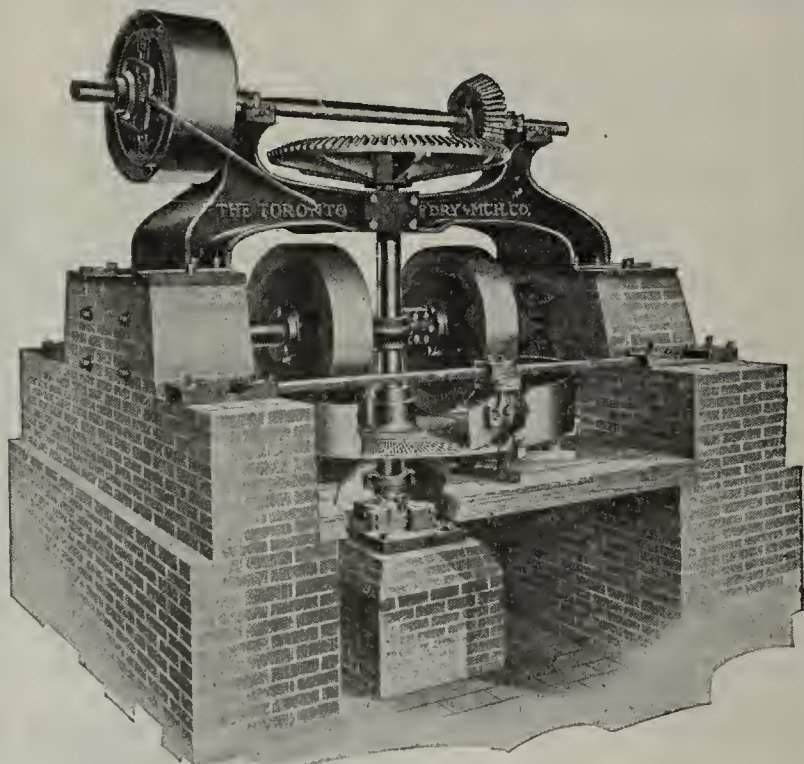
Just add it to your clay at the pug mill or dry pan and it will make the scum-producing salts insoluble and harmless to your ware.

Write us now.

The Rollin Chemical Co.
Charleston, W. Va.

BRICK MUST HOLD UP ITS REPUTATION

THE MEANS GRINDING PANS



For Grinding Wet, Semi-Dry and Dry materials. Made in sizes adopted by the best judges. We are in position to solve your grinding problems.

SINGLE, DUPLEX OR BATTERY INSTALLATIONS OF 8, 9 AND 10 FOOT PANS.

Write for Descriptive matter and prices on Pans Also Bulletins on Sewer Pipe and Tile Presses, Elevating and Conveying Machinery, Trucks, Barrows and other equipment for the clay products manufacturer.

THE TORONTO FOUNDRY & MACHINE CO.
Toronto, Ohio

QUESTIONS

A Two Cent Stamp May Bring
You Advice That Will Stop
a Waste, Improve Your Ware
or Lower Your Production Cost

Address all communications intended for this department to "Editor Questions and Answers," care of "Brick and Clay Record," Chicago.

Desires Information About Hollow Tile

922. Georgia—I would like to know what literature you have that would give standard prices on various sizes of hollow building tile. To what extent is it accepted by the public as a building material in comparison with brick? What is the carrying capacity of hollow tile in wall construction and is it accepted by the fire commission as safe building material?

We do not know the standard prices on various sizes of hollow tile, but according to the current issue of *Building Supply News*, a publication which gives the current prices of building materials in a number of cities thruout the United States, hollow tile of 4x5x12 size is selling at prices varying from \$40 to \$90. Hollow tile of 5x8x12 size is selling at \$50 to \$100 a thousand.

The popularity of hollow tile as a building material is increasing daily and in some parts is equally as popular as brick.

The following is substantially the same as that quoted in a booklet prepared by the National Fire Proofing Co., of Pittsburgh, Pa.

"Primary exterior and bearing walls and primary interior bearing walls and partitions that may be used to receive directly the loads from floors or roofs, in addition to their acting as enclosing and partition walls also columns that may be used to support the weight of construction and loads on floors and roofs may be constructed of hollow tile. All tile used shall be medium burned dense hollow tile of uniform quality, free from shrinkage cracks, with true beds and having an ultimate compressive strength of not less than six thousand pounds per square inch of net area of cross section of individual samples of the tile tested separately, with the test force so applied as to produce the compressive stress in the tile tested in the direction of the cells and parallel with the fiber of the hollow tile.

"Hollow tile having an ultimate compressive strength per square inch less than that specified above, but that otherwise fulfill the foregoing requirements, shall have a proportional reduction in the allowable stress per square inch of net area of cross section.

"For primary exterior bearing walls, the allowable stress shall not exceed 720 pounds per square inch of sectional area for weight of construction and permanent fixed loads, and 480 pounds per square inch of sectional area for weight of live or moving loads.

"For primary interior bearing walls and partitions, the allowable stress shall not exceed 900 pounds per square inch of sectional area for weight of construction and permanent fixed loads, and 600 pounds per square inch of sectional area for weight of live or moving loads."

Your letter was turned over to the Hollow Building Tile Association, who have advised as follows:

a n d ANSWERS

Best Authorities in Every Clay working Branch Are Called Into Consultation—Their Advice is Free to You, Thru These Columns

Should a reply be desired by letter, send a stamped and addressed envelope with your question, and it will be answered promptly.

"In answer to your first question we are enclosing herewith universal price list covering all standard sizes and in which information regarding weights and other details is given. Prices are quoted by various manufacturers as a discount from list and vary by reason of the difference in cost of manufacture in various districts and the amount of freight rate to any particular destination.

"Hollow tile is very generally accepted by the public as a modern development in permanent fire resistive construction, economical because it is light in weight, easily handled and easily erected. It is naturally lower in cost than all forms of solid masonry construction under average conditions. The carrying strength of the wall depends upon its thickness and the bearing area of the particular tile. Roughly speaking, a wall of hollow tile of normal height will safely support from five to twenty-five times its own total weight, which means that it has a large carrying capacity for floor and roof loads.

"In reply to your last question, it is accepted by all the large cities as a safe building material, altho in some cities more or less restricted to residence and other moderate sized structures. In many of the larger, progressive cities, such as New York, Cleveland, and Detroit, the use of hollow tile is very generally permitted for nearly all classes of structures. In fact in the City of New York the enclosing walls of fire proof skeleton frame structures may be 12 inches in thickness, consisting of 8 inch hollow tile with a 4 inch facing of brick or other fire proof masonry."

* * *

Wants Data for Building Modern Plant

921. *Michigan—I am desirous of securing all possible data relative to the equipment of a modern common brick manufacturing plant; also any data which would permit me to compare a certain clay deposit with the deposits of clay now being used in the manufacture of brick in this vicinity.*

A book entitled, "Clay Plant Construction and Operation," which we believe is of untold value to a man in your position, has just come from the presses. We cannot think of any advice to give you that would be better than the reading of this particular book. It is so different from ordinary text books, and by far the best ever written in the clay products field that we cannot recommend too strongly its merits, particularly to a man contemplating the construction of a brick plant.

The question that you put up to us is very formidable and to answer it properly and thoroly would require knowing a great deal about your particular conditions. The type of plant to build and the kind of machinery to use depends on the size of the plant to be constructed and the kind of clay used.

On some clays a stiff mud machine cannot be used successfully. However, whenever it can be used it is without

INSURANCE AGAINST FIRE At Actual Cost

The Manufacturers of Clay Products at Reciprocal Insurance Bureau, offers you an opportunity to come in and insure against fire with preferred risks that are of your own class and engaged in the same line of business. This Bureau saves you the expense of paying for (1) enormous overhead, (2) agents' commissions, (3) companies' profits. You are assured of greater safety, co-operative assistance of a practical kind, and better service.

A large Brick and Tile plant owner writes:

"We can truthfully say we have never had more prompt and satisfactory adjustment of claim than in this case."

Write us for rates and our plan to render better service and greater safety.

Manufacturers of Clay Products at
Reciprocal Insurance Bureau
29 S. LA SALLE ST., CHICAGO



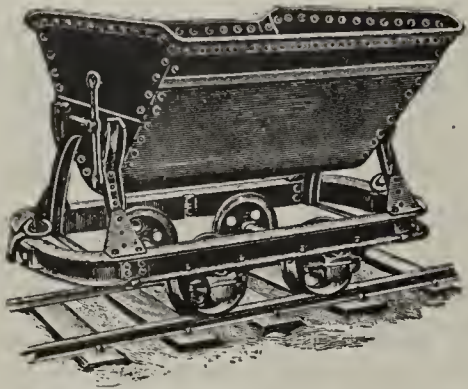
Light steel rails

We saved the day for the Clay and Coal Operators in War Times by furnishing BUCKEYE MINE RAILS, whenever and wherever needed, and while many other Steel Mills were running exclusively on other material, you could not have operated without us at that time.

Now, in Times of Peace, we ask that you do not forget us, as we can, and will render the same unexcelled service, and furnish the same high quality of material. "Buckeye means best", and BUCKEYE LIGHT STEEL RAILS are better still. All sections from 12 lb. to 40 lb. inclusive always in stock for quick shipment.

Let us have your inquiries, and we will take the chance of developing them into orders on our books.

THE BUCKEYE ROLLING MILL COMPANY
STEUBENVILLE, OHIO



Biehl Cars and Equipment

Their 60 year record of satisfactory performance for manufacturers everywhere is an indication of what Biehl Cars and Equipment can do for you.

A regular line to select from. Special designs built from specifications. Dump Cars, Platform and Dryer Cars, Buckets, Barrows, etc. A copy of our latest catalog, No. 8, is yours for the asking.

THE BIEHL IRON WORKS, Inc.

Office and Works, Reading, Pa.

Branch Office: Detroit, Mich., 725 Ford Bldg.

Wenham, Bates & Goode, Inc.,
17 Battery Place, New York City



We specialize in steel car wheels

doubt the best machine to employ.

For a plant of large capacity of any greater than seventy-five thousand daily capacity, a continuous kiln is recommended. On the other hand, if the Chicago method of burning can be applied for your particular clay, it would probably be wise to install this system of burning.

A clay plant is so different from other establishments that there is no set design that would be efficient and apply to all cases. Therefore, the best thing to do is to obtain an engineer to investigate your plans and property and let him give you his advice.

✕ ✕ ✕

Wants to Build a Clay Bin

920. *New York—Please inform us what kind of a bin will deliver clay or kaolin into a wagon. What is the angle of repose of clay, or better, what angle is necessary to make clay slip down thru an opening at the bottom of a chute?*

We have in mind making a chute 6 feet wide and 2 feet deep with a slope of forty-five degrees. Will two gates that pull up with rack and pinion 2 feet by 2 feet each deliver the clay into the wagon?

We believe that the slope of the proposed bin is sufficient to cause the clay to flow out of the gates. However, it has occurred to us that a good way of being sure of this is to set some boards at an angle in such a position so that clay can be loaded on it and the behavior noted when the boards are set at various angles. This can be done in a very simple manner without much time or expense, and will, we believe, serve as a very satisfactory means of determining the best construction for your clay bin.

We have seen several kinds of material used in the construction of clay bins, all of which have proved quite satisfactory. Some have been constructed of steel, others of wood and a few of brick. Wood has been by far the most common material used in clay bin construction.

✕ ✕ ✕

What is Thickness of Drain Tile Walls?

923. *Iowa—Could you give us information on the thickness of walls of drain tile? If you have it, we would be pleased to know the thickness of the following size tiles: three inch, three and one-half inch, four inch, five inch, six inch, eight inch, ten inch and twelve inch.*

According to Bulletin No. 31 of the Engineering Experiment Station, at Ames, Iowa, in which is contained a report of tests made on a number of drain tile, the following diameters of tile, as well as the thickness of walls is given:

Diameter	Thickness of Wall
5 in.	.60— .65 in.
6 in.	.55— .70 in.
7 in.	.60— .65 in.
8 in.	.65— .75 in.
12 in.	.90—1.08 in.
16 in.	1.01 1.03 in.

These are the only figures we have on hand at the present time. Should we find more data on this subject, we will be very glad to forward it to you.

✕ ✕ ✕

Drainage of Wet Lands Making Progress

According to estimates of the Agricultural Department, the drainage of wet lands in the Southern States is proceeding so rapidly that by 1920 seven million acres of land will have been included in the completed projects.

BUCYRUS



Boost Your Production

You can do it with the sure, steady output, rugged construction and high power of

Bucyrus Revolving Shovels

A BUCYRUS can improve the quality of your brick by obtaining a more thorough mixture of your bank from top to bottom. It can cut your costs and increase your output.

Let our representative look over your property and tell you how. All sizes of revolving and standard railroad type shovels and drag-line excavators.

Send for bulletin B.

BUCYRUS COMPANY

SOUTH MILWAUKEE, WIS.

New York, Cleveland, Birmingham, Minneapolis, Denver, Portland, Ore., San Francisco, Salt Lake City.

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

Manganese

Before the war, Caucasian Manganese, due to its high quality and uniformity, had come into general favor, but with supplies from that section of the world shut off, the Lavino Co. transferred their activities to the South American field, building up a large organization in Brazil for the purpose of importing this important commodity at first hand.

The consumption of Dioxide or chemical manganese runs into a large quantity, many thousands of tons being used in the manufacture of dry batteries, without mentioning the brick and other industries taking same.

In 1915 a large grinding plant was erected at Plymouth Meeting, Pa., a point close to Philadelphia, for the purpose of furnishing ground manganese in the different sizes in which it is used. This plant embraces four separate units, with the result that all orders, regardless of their size, can be given prompt attention.

One particular grade of South American ore is used for the brick trade, it having been found that the ore compares favorably with that previously imported from the Caucasus. Messrs. Lavino state that they now have Caucasian ore at their plant, but the price, as can be surmised, is very high and lower figures can be named on the South American ore.

Particular stress is laid on the uniformity of their material, a laboratory being maintained for keeping watch on the quality of all shipments, whether inbound or outbound. Realizing that the matter of size or grinding is very important to brick men, Messrs. Lavino state that this feature is carefully looked after and that their customers can depend on uniform shipments.

They also express their willingness to submit samples without charge and welcome inquiries from brick manufacturers now using manganese or from other firms contemplating the manufacture of manganese face brick. The company is exceptionally well situated for supplying ground manganese to manufacturers of face brick.



Garford Announces New Ton-and-a-Quarter Model

The Garford Motor Truck Co., of Lima, Ohio, announces the addition of a ton-and-a-quarter truck to its already extensive line. It is to be known officially as Model 25.

This latest Garford development is described as having ample wheel base and body space and is said to be the huskiest model of its capacity produced to date. Provision has been made for the installation of electric lights and an electric starter.

The engine, of 22 horsepower, S. A. E. rating, has four cylinders $3\frac{3}{4} \times 5\frac{1}{8}$ inches cast in one block, with heads and valve chambers integral. The valves are large and ample water jacketing is provided. With the valve location on the right side and the carburetor on the left, the gas passes through a water-jacketed section of the cylinder.

The engine is of sturdy design, employing a heavy crank shaft of the three bearing type, and cast iron upper and lower crank cases. The fly wheel is enclosed in a housing integral with the crank case.

The pistons of gray iron are provided with three concentric, tested compression rings. The pistons and connecting rods are of unusual length and the piston sweep is practically confined to the cylinder bore. Only a very small portion protrudes below the cylinder base when at dead center.

The crank shaft and four long rod bearings are of the



A Record of Good SERVICE

A clay-digging machine that stands the rough usage of unskilled workers, that is unprotected from heat, rain and freezing weather, yet continues after many years' service to give large production with little maintenance cost, is surely a machine of unusual merit.

An early model Buckeye Clay Digger has been digging and mixing clay for over 8 years at an Indiana clay plant, and is reported as being "still on the job." The owner likes this machine because it requires "low upkeep, low running expense and gives a good mixture."

The Buckeye shaves thin slices of material, cutting different strata from bottom to top, and mixes the clay thoroughly. Can be operated successfully on banks that are too shallow for other machines.

The experience of the above clay manufacturer has been observed among other brick and clay men.

This observation leads us to believe that there are many clay pits that could profit by and get a better mixture with the Buckeye Traction Digger.

May we send you data? Ask for a copy of "Digging Clay for Profit."

The Buckeye Traction Ditcher Co.
Findlay, Ohio

Buckeye

Traction Digger

The new Model C. M. is equipped with a combination conveyor which enables operator to change his discharge from pit to bank delivery, alternating as desired.



The Gateway to Better Things BOOKS

The Master Workman has a Master Mind—he knows perfectly his own merit, and in order to increase his knowledge, he studies the methods of other men—in the only way that he can—in books. If you would be master of your work you must read and know what others know.

Bricks and Tiles.....	\$1.50
Brick Drying (English edition).....	1.00
Bricklaying, Rudiments of Practical.....	.75
Bricklaying System.....	3.00
Brick Work (Walker).....	.65
Brickwork and Masonry.....	3.00
Building Construction and Superintendence, Part 1, Masons' Work.....	6.00
Bungalows, Camps and Mountain Houses.....	2.00
Ceramic Industries—A Treatise On (E. Bourry).....	7.25
Clay and Pottery Industries.....	6.00
Clay Plant Construction and Operation.....	4.00
Clays: Their Occurrence, Properties and Uses.....	5.00
Clayworker's Handbook.....	2.50
Clay-Working Problems.....	1.50
Directory of Dealers.....	.50
Engines and Boilers.....	1.00
Engineering for Land Drainage.....	1.80
Estimating Frame and Brick Houses.....	1.00
Finding and Stopping Waste in Modern Boiler Rooms, Vol. 2.....	1.00
Garages and Motor Boat Houses.....	1.50
Glazer's Book.....	1.25
Hollow Tile House, The.....	2.50
How to Analyze Clay.....	2.00
How to Build Up Furnace Efficiency.....	1.00
Land Drainage.....	1.50
Manufacture of Roofing Tile, (English Edition).....	1.25
Manufacture of Roofing Tile (Worcester).....	1.00
Modern Brickmaking.....	6.00
Notes on Pottery Clays.....	2.00
Observations on Pottery.....	.60
One Hundred Bungalows.....	.50
Pottery.....	1.25
Powdered Coal as a Fuel.....	3.00
Practical Brick and Tile Book.....	2.50
Practical Farm Drainage.....	1.40
Producer Gas and Gas Producers.....	4.00
Refractories and Furnaces.....	4.00
Rock Excavation, Handbook of.....	5.00
Scientific Industrial Efficiency.....	2.00
Scumming and Efflorescence.....	.50
Silos—Construction and Service.....	.65
Steam Power.....	2.00

Select the books that you want the most, and we'll send them to you postpaid upon receipt of price, but we can't send any books on approval. All foreign books subject to 15 per cent. import duty.

Address, Book Department,
Brick and Clay Record
610 Federal Street, Chicago, Ill.

bronze-shell, babbitt-lined type. The upper rod bearings are hard bronze.

The oiling is of the constant level splash system. A gear pump driven by the cam shaft circulates oil thru a steel tube system to the main shaft bearing, the overflow oiling the piston and cylinder. Lower rod bearings are oiled by splashers dipping into troughs filled by a feed from the gear pump.

Ignition both on the standard and the electrically equipped models is by straight, high-tension magneto. The magneto is controlled from the steering column. The spark plugs are located over the inlet valves.

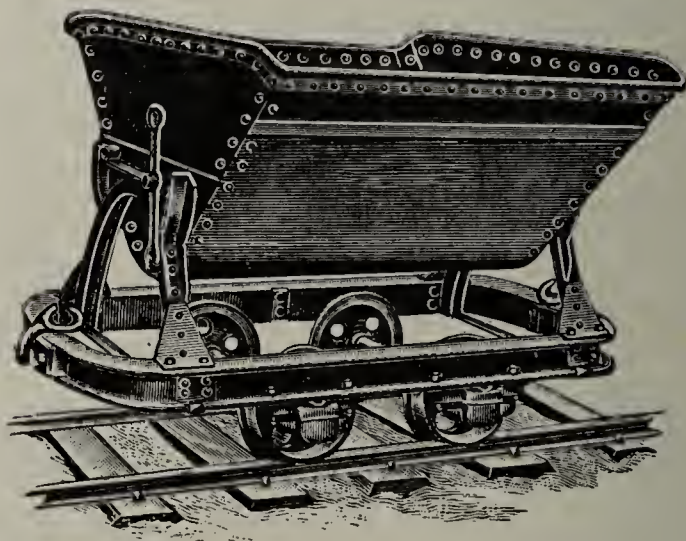
Carburetion is obtained through a Stromberg one-inch float-fed carburetor. The throttle control is by foot acceleration as well as by hand throttle from the steering column.

The clutch is of the multiple dry-disc, ball-bearing type enclosed in a housing attached to the fly wheel case. The transmission is a three-speed selective type with all gears and shafts constructed of $3\frac{1}{2}$ per cent. nickel steel, double heat-treated.

The Model 25, virtually a ton-and-a-quarter truck, embodies characteristics of strength obtainable in a truck of one and one-half ton capacity. It has a one and one-half ton rear axle and a one and one-half ton frame, with a transmission of same type. A complete description may be obtained from the manufacturers.

✕ ✕ ✕

The Biehl Iron Works, Inc., Reading, Pa., state that they are in particularly good position to accept orders for car equipment for clayworking plants, quarries, mines, etc. They



The Biehl Dump Car

manufacture all kinds of small cars, trucks and steel buckets of the tipping and bottom dump types, and their equipment is giving satisfactory service. The company also specializes on steel car wheels.

✕ ✕ ✕

The southern sales office of the Bucyrus Co. has been moved from New Orleans, where it has been for a number of years, to Birmingham, Ala., Room 2212 Jefferson County Bank Building. C. N. Ballentine will remain southern sales manager and will be assisted by E. J. Wilkie, who for many years has been connected with the Sales Department at South Milwaukee.

✕ ✕ ✕

The Brown Instrument Co., Philadelphia, Pa., are constantly coming before the trade with interesting and attractive circulars, among the latest being a folder on heavy tinted stock, entitled "This is the way to keep your eye on the boys at the kilns." The picture itself tells the story so graphically that the explanatory text is hardly necessary. A return post card is a convenient feature of the circular.

✕ ✕ ✕

Bulletin No. 270 just issued by Walter A. Zelnicker Supply Co., St. Louis, Mo., is free to the trade.

Alsey Brick & Tile Co.....	880
American Clay Machinery Co.	897-898
American Dressler Tunnel Kilns, Inc.	Front Cover
Arnold-Creager Co.....	892
Associated Business Papers	912

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Ball Engine Co.....	885
Barber-Greene Co.....	880
Biehl Iron Works.....	887
Bonnot Co.....	828
Bristol Co.....	878
Broderick & Bascom Rope Co.....	878
Brookville Truck & Tractor Co.....	902
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Crescent Belt Fastener.....	877

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Dee Co., Wm. E.	881
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Didier-March Co.....	832
Dover Fire Brick Co.....	876

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No. 10

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

"Tell the Workers"

THAT ALL IS NOT WELL in the ranks of industry, is openly apparent. Workers are not satisfied, employers are restless and apprehensive, and the times seem out of joint.

Many mighty men, men of unquestioned brain power, thinkers, philosophers, economists, practical business men, and impractical Utopian dreamers, professors, writers, and last, but not least, the average citizen, have all tried their hand at suggesting the cause and solution for the distressing dissatisfaction. Much that has been said and written is helpful—a great deal is otherwise, clouding the already murky industrial waters.

OUR "BIT"

Without wishing to add to the mass of philosophical "bunk" concerning the trend of the times, but with the hope of helping clay products manufacturers see clearly at least one of the causes which we believe to be responsible for the present unrest among many of the nation's workers, we desire to call your attention to a matter worthy of considerable thought and attention.

You who have filled a pay envelope—who have managed and financed a business—know there have been times when, consciously or unconsciously, employes have expressed interest and perhaps surprise at the receipts or income of the business.

The publication of financial statements in newspapers and other mediums has provided more than one occasion for the worker to inquire into his firm's gross business. Now the process of giving financial statements the light of day in the usual way is perfectly legitimate. The publication of such information often helps the company's credit. At least, it gives those with whom the concern may be doing

business, an idea of the company's status and standing, financially.

But the worker takes this statement and examines it with wonder and surprise, perhaps resentment. He notes the gross income. Knowing little or nothing about the conduct of business, he feels that all that the company takes in in the way of hard, cold cash, is "pure velvet." He often utterly overlooks the vast difference between receipts and profits—the former looks big to him and he confuses it with the latter.

HOLDS SHOP MEETINGS

In this connection, Charles M. Piez, president of the Link Belt Co., told an interesting incident at the recent "Our Country First Conference" held in Chicago. He said that it had been his custom to give shop talks to his workers, which, by way of parenthesis, we believe is a mighty good idea. On the occasion of one of these shop talks, a worker asked Mr. Piez if it was not true that he was making an exorbitant profit on his (the worker's) labor. Mr. Piez immediately ordered the cost sheets brought to him and from the actual records of the company, demonstrated to this worker the slender margin of profit the firm made on his labor. The man expressed his surprise at the facts disclosed. This worker no doubt had been harboring a grudge against the company for a fancied wrong. Giving him the actual facts in the case nipped a radical in the bud, making him a conservative. Enlightening the worker is a worth-while enterprise.

ENGLAND'S EXPERIENCE

Only a few months ago in England a great campaign among the working classes was on. It was cleverly named "Tell the Workers." British statesmen and industrial leaders saw the great need for disseminating certain information with regard to England's industrial situation. Many workers were resting on their oars, following the close of hostilities over on the continent, with the result that the produc-

tion of living essentials, to say nothing of goods for England's vast and vital export trade, was dangerously decreasing. Heavily in debt as a result of the war, England had realized long before the signing of the armistice that if she was to recuperate at a satisfactory pace, she must greatly expand her foreign trade and show great activity therein. The welfare of the island empire depended upon it.

Now, Britain's workmen, by letting down on production, were unconsciously scuttling the financial ship. Something must be done, and that quickly!

Therefore, speakers radiated from London in a great campaign to put these vital facts before the workers. The press took up the cry and soon the significant words were on a million lips: "Tell the Workers."

A more detailed story of this campaign and its possible application to the clay products manufacturing industry is told on another page of this issue.

WHAT WE NEED IN AMERICA

What we need here in America is a "drive" along similar lines. It would go a long way toward putting down radicalism, for after all is said and done, most of the business in the United States is of a medium or moderate type. Especially is this true of the clay products manufacturing industry. Our employers for the most part are not in the class of oligarchical capitalists and the vast majority of our workers, we venture to say, do not have anarchistic tendencies. There is a need for getting together, for telling the workman what he ought to know about the business. Remember that most of the opposition to President Wilson's foreign policy has grown out of the fact

that he kept the Senate and the public uninformed when both were clamoring for information. It was simply the outworking of human nature that engendered the feeling of difference between him and his opponents.

"Tell the Workers." It is better for you to tell him in advance why it is impossible for you to pay him unreasonable wages and why it is necessary to have maximum production, than to have him tell you the wages he demands and the hours he will work.

* * *

The Coal Crisis

AS THIS ISSUE goes to press, the strike of the bituminous coal miners seems inevitable. The Government has a strong hand on the situation and will spare no effort to bring the workers and operators to terms. President Wilson has declared the strike "illegal" and from the latest reports, is planning to take the necessary legal steps to protect the welfare of the nation.

In the meantime, talk of restoring the quiescent Fuel Administration is more fact than fancy. With the restoration of the Fuel Administration to power, will come the allotment of coal on the basis of essential industries as during the war. With the whole clay products manufacturing industry far behind on production, it is needless to say, that this does not look very good to the average clay worker, but we trust that the strike will be quickly settled without necessitating the reinauguration of this drastic policy. We, together with our readers, will anxiously await further developments.

TONY SAYS—

For long—a year I pay da rent
An' keep da lan'lord fat
But now I'm leev-a een da tent
No can afford da flat—

Da lan'lord say eet cost-a nice
For hang da pape' an' paint
But rents ees tak-a sooch-a boun'
My Rosa almos' faint!

Now Rosa an' me, we look aroun'

To find a house or flat
But w'en he tell us renting price
We not know where we at.

We walk ten mile, an' then ten more
An' no can find a place
W'at's mak dees rentin' prices soar
At sooch-a' nawful pace?

I'm gonna fool 'em now you bet!
I'm goona play a treeck
Oh w'at a beeg sooprise dey'll get

I'll build a home of breeck.

An' den I'll laugh at high-a rent
For lan'lord I'm not care
An' on my house no spend a cent!
Eets breeck! not need repair.

Dees breeck-a house ees fire proof
An' not cost mooch to heat.
Weet' asphalt sheengles on da roof
Dees house—she's not be beat!

—E. C. Roberts in "Material Facts"

IF YOU WANT *to* ATTEND FACEBRICK'S BIGGEST CONVENTION VISIT FRENCH LICK, DECEMBER 2 *to* 4

*Bring Your Clubs Along, If You Play Golf—You Will
Find Plenty of Opportunity to Match Your Game With
Some of Your Competitors—or Better, Your Copartners*

LIKE A HUGE and powerful magnet, the greatly expanded scope of the American Face Brick Association, with its accompanying increase in assessment fees, will irresistibly attract manufacturers of face building brick from every quarter of the United States to the eighth annual membership meeting at French Lick, Ind., December 2 to 4.

The men who are investing no small amount of money in the promotional program of the Association are, it is needless to say, very much interested in its disbursement and in the exact results of the expenditure in an increasing demand for face brick. They will naturally flock to French Lick to learn at the annual meeting of the Association just what is being accomplished. The glitter and glamor of America's most metropolitan city will pall like a weak and ineffective device before the simple call to business this year at one of America's most famous watering places. All of which means that 1919 will undoubtedly witness what will be a record-breaking convention for the A. F. B. A., whose membership is now twice as large as it was last year at this time and its income twenty times as big.

PLENTY OF TIME FOR GETTING TOGETHER

As in the past, the meetings of the Association will be limited strictly to business procedure. It is not expected that the convention will touch upon anything that does not relate to face building brick. There will be no associational dinner, nor other threadbare forms of conventional entertainment. This does not mean, however, that there will not be sufficient opportunity for the delegates to get together in a social way. With the dealers meeting at the same time and place, there will be much occasion for hobnobbing over 1920 arrangements. This has always been the case with the face brick convention and it will always continue to be so while the dealers meet at the same location.

It is planned that the manufacturers' session shall be "short and snappy." The dealers will hold their session at the same hour so that both dealers and manufacturers will be free to discuss their personal business when both can give it undivided attention.

THE PROGRAM

The first session of the convention will convene at 2:30 o'clock on the afternoon of Tuesday, December 2, in which the regular business of the roll call, reading of the minutes, address of the President, and presentation of general and financial reports by the Secretary-Treasurer, will be made. At this time, M. F. Gallagher, one of special counsel employed by the Association to prosecute formal complaint before the Interstate Commerce Commission for a

reduction in freight rates, will present to the members a summary of what has been accomplished to date and the plans which have been made for future procedure. As this case is one of the most comprehensive which has ever been brought before the Interstate Commerce Commission and as its effect will be far-reaching on the business of every manufacturer, the interest in this presentation is manifest. Reports by regular committees and the appointment of new committees will also take place at this session.

The morning of Wednesday, December 3, will be devoted to an address by Elmer H. Adams, the Association's general counsel, concerning whom more is said on another page of this issue. In addition to Mr. Adams, G. C. Mars, the Association's advertising director, will give an exhaustive exposition of the organization's advertising program, explaining the assets and facilities of the Service Department and making suggestions as to how the membership can "cash in" on the big cooperative effort among face brick manufacturers. Effort is being made by the American Face Brick Association to obtain the attendance of the dealers at this session in order that they too might profit by the research and propaganda carried on by the Service Department of the American Face Brick Association.

The afternoon of Wednesday, December 3, will be set aside for divisional meetings. It has been learned that the majority of the divisions of the American Face Brick Association have voted to hold their December meetings at French Lick during the annual meeting of the Association and the afternoon of December 3 will be utilized for this purpose.

The last membership session of the convention will be held on Thursday morning, December 4, during which E. H. Schull, chief of the system staff, of Ernst and Ernst, Chicago, will give the remarkable results which have been achieved thru a system of cost exchange in an entirely different industry. This system of cost exchange was effected by Mr. Schull, and most unusual results have been noted. Time will be given for unfinished business and the election of officers. A meeting of the Board of Directors will be held on the afternoon of December 4.

It might be said that the above program is tentative, that is, it is not entirely fixed. However, it is expected that the proceedings of the convention will follow the above outline.

HERE IS A CHANCE TO MATCH YOUR GAME

French Lick as a meeting place is thoroly familiar to most face brick manufacturers and dealers, the Association having convened there in years past. The splendid facilities, painstaking attention and unusual courtesy of the hotel management, has again prompted them to meet

at this well known hostelry. Other points were considered but the present congested conditions of metropolitan hotels led them to fear that the membership would not be favored with proper hotel accommodations. Furthermore, since the membership has expanded so greatly and scattered to all sections of the country, it was felt that the choice of French Lick would be more convenient for every member of the associations. If the weather is mild, opportunity will be offered for indulgence in the chief

outdoor sport of the resort, namely, golf. Many of the manufacturers will undoubtedly bring their clubs.

As is well known, the French Lick Springs Hotel is operated on the American plan. Special rates have been made by the management for the convention as follows:

\$ 7.00 a day for a single room without bath.

\$ 8.00 a day for a single room with bath.

\$12.00 a day for a double room without bath.

\$14.00 a day for a double room with bath.



HERE *is the* MAN *whose* KEEN EYE *is the* LEGAL GUARDIAN *of the* A. F. B. A.

FOR MANY YEARS the American Face Brick Association has been quietly but effectively pursuing the even tenor of its way, maintaining a watchful eye upon the freight rate situation, disbursing to its members information of value concerning transportation tariffs, overcoming distribution difficulties, investigating manufacturing costs, advocating the standardization of ware, and striving toward the attainment of many other worthy accomplishments. The

day, however, when the Association will limit its efforts merely to the trade has passed into history. With the undertaking of a tremendous promotional campaign, which will bring the name of the American Face Brick Association before the consuming public of the United States thru a formidable array of national mediums, the old manner of quiet and conservatism is passed, and with the dawning of the new day in the Association's activities, the retaining of ex-



Elmer H. Adams, of Adams, Childs, Bobb and Wescott, is a Very Busy Man. If You Want to Prove This Try and Call On Him. The "Watch Dog" of the A. F. B. A. is Here Seen in a Characteristic Attitude.

pert legal counsel and advice has become a very important feature of the organization's work.

THE MAN WHO IS NOW IN THE LIMELIGHT

It is perfectly natural, then, that the man upon whose shoulders the task of wisely advising the officers of the Association rests, should become a center of interest to all face brick manufacturers. Many undoubtedly have been wondering who he is. For the particular benefit of such, let it be said that he is none other than Elmer H. Adams, senior member of the law firm of Adams, Childs, Bobb and Westcott, 79 W. Monroe St., Chicago.

After much persuasion (?), in which the secretary of the American Face Brick Association and the editor of *Brick and Clay Record* joined, Mr. Adams reluctantly (again?) divulged the following thrilling facts concerning his personal history.

It was in Mercer County, Ill., on a farm that Mr. Adams first saw the light of day. Mercer County is in a portion of Illinois where they raise good corn and plenty of it. At the age of fourteen years he migrated to Chicago where he had his early experience in earning a living in a printing office, while he attended school.

SEEKS LAW EDUCATION

In 1889, Judges "Tom" Moran and Bailey, two very eminent members of the bar, at the request of a number of ambitious youths, who were eager to learn, organized a law school which had its sessions in the evening in the old Methodist Church block at the corner of Washington and Clark streets. Mr. Adams, who had his heart set upon a law career, attended this night school, being occupied during the day in the position of law clerk. This school was the beginning of the Chicago College of Law, afterwards renamed the Kent College of Law. He took his examination for admission to the bar before he was twenty-one years of age and passed it. Of course, he could not be admitted to the practice of law until he was passed twenty-one years of age so it was necessary to change his certificate when he reached the proper majority to indicate that he had passed the examination at that time.

Mr. Adams went into business for himself in 1893 and has always made a speciality of corporation and building material cases. The extent of his practice and that of his firm is very wide, trying cases in nearly every section of the United States.

GETS FAVORABLE DECISION IN NOTED CASE

Among the important cases handled by Adams, Childs, Bobb and Westcott, was that of the Salt Association in Michigan, which extended over seven weeks and was won before the United States court. The Salt Association was being sued for combination in restraint of trade. Mr. Adams' firm has been identified in most of the coal association hearings. For eighteen years Robert Childs, one of the members of the firm, was special prosecutor in the Department of Justice of the United States. He was prosecutor in the famous John R. Walsh case.

PROMINENT IN ASSOCIATION OF COMMERCE

Mr. Adams has always been an active member of the Chicago Association of Commerce, being chairman of the Ways and Means Committee for several years in succession. It was in connection with his work with that body that he was sent to Paris in June of 1914 to attend a meeting of the world's business organizations, the proceedings of which were in French. Mr. Adams recalls sitting next to a Prussian officer, who, upon being asked if he had ever before

been in Paris, replied in the affirmative adding the interesting fact that he had marched into Paris at the head of his regiment at the close of the Franco-Prussian war. He added a pertinent remark that he again expected to indulge in a similar bit of exultation. Considering the fact that just a little more than two months later the Germans were making pretty fair progress toward Paris, this Prussian officer was not far from correct in his prediction.

BETTER WATCH YOUR GOLF REPUTATION

A remembrance which is highly prized by Mr. Adams is a watch which he won recently in a golf tournament at the Glenview Golf Club links. On the back of the watch is engraved "'Twa Days' low net score," which being translated means that after knocking the "pill" around for two days Mr. Adams had the lowest net score of any of his competitors. He is a regular golf "fan."

Mr. Adams is a member of the Chicago Athletic Club, Mid-Day Club, and a life member of the Press Club.

He will deliver a special address on Wednesday morning, December 3, at the annual meeting of the American Face Brick Association.

* * *

"Labrico" Is the Name Selected

In the July 29, 1919 issue, *Brick and Clay Record* announced a contest, open to all readers, in which the Los Angeles Pressed Brick Co., of Los Angeles, Cal., offered a prize of \$50 to the person suggesting a trade name which could be applied to one or more of the products manufactured by this company in all of its advertising.

The contest closed on September 30 and all names suggested were kept confidential in the offices of *Brick and Clay Record*. To insure equality to everyone, each trade name suggested was given a number and at midnight, September 30, the names suggested, with their respective numbers, were forwarded to the Los Angeles Pressed Brick Co., who now announce the winning numbers.

"We have selected the word 'Labrico', writes Howard Frost, president of the Los Angeles Pressed Brick Co., "which unfortunately was entered by two—number 29 and number 56. We are enclosing our check to you for \$50.00, which you will probably divide equally among the two entries giving this word."

No. 29 was sent in by Fred E. Volk, R. F. D. No. 6, Madison, Wis.

No. 56 was sent in by George S. Davies, 1965 E. 81st St., Cleveland, Ohio.

Under date of October 27, *Brick and Clay Record* sent a check for \$25.00 to each of the lucky winners.

* * *

Short Course in Ceramics at Illinois

The Department of Ceramic Engineering of the University of Illinois is engaged in making preparations to give a two-weeks' short course in ceramic engineering, in February, 1920. This short course will follow in general the same lines as the short course given in 1918 and will include lectures and laboratory work in the physics and chemistry of ceramic materials and processes; mining, sampling, handling and testing of clays; shaping, drying and burning; machinery and equipment for the ceramic plant; refractories, glass, glazes, etc. The complete program of the course will be ready about December 1 and will be sent free to all who apply for it. The course is open to any person interested.

TELL *the* WORKERS

Here is Some Opportune and Excellent Advice on a Subject That is Eminently of Current Interest—Two or Three Articles Along Similar Lines Will Follow in Subsequent Issues

By A. F. Greaves-Walker

YES, THE TITLE WAS STOLEN—stolen from a chap named Boyd Cable, who is spreading the doctrine expressed in those three words all over the world. And for fear you haven't heard of it I'm going to help him.

But who is Cable? Well the English "Who's Who" has this to say of him—"Officer in the army—born India-Scotch parentage—education, grammar schools. Very mixed career; served in South Africa 1900-1901 as scout, and since then has followed many occupations from teamster and tramp in Australia and farm hand in New Zealand to business manager and partner in commercial work; has sailed before the mast and been trimmer, fireman and greaser on steamships; applied for commission in army in August, 1914, and went to France in that year."

Some career, and I think you will agree with me that it entitles him to speak from the standpoint of both employer and employe.

Cable's articles carrying the above title appeared in the "London Times" of July 22 and 23 and August 5, 1919. They were so full of common sense that they have been widely copied and commented upon all over the world. They did not present a single new idea—they simply brought back to memory a lost art—the art of taking your employes—not alone your superintendent and your foreman—*your employes* into your confidence enough to take them out of the class of machine tools and to put them into the class of intelligent human beings. This does not mean turn the shop over to them or put them on the board of directors—not a bit of it, simply *tell the workers, your workers* what they are doing, why they are doing it and what *the results will be—stop treating them exactly as you do the mule that pulls the ash cart.*

I am not going to try to repeat all of Cable's articles—just give you the "high lights."

Remember in noting what he says that he was assigned by the British War Office to go from plant to plant, during the war, and tell the workers how their particular product was helping to win the war.

He says—

"If there is one better thing to do than to settle a labor dispute it is to prevent it arising; and employers could go a long step of the way to this desirable end on the simple rule, *Tell the Workers.*"

"The root trouble with great bodies of the workers today is that their *employers do not consider them as human beings with a human interest* in the activities of their industry.

"I know some employers may cry out at this statement. But altho many friends nowadays do work on different lines, most of these are content to treat their workers well, to give them good pay and housing and recreation rooms, and encourage their cricket clubs and games and amusements. All this is good, and very good, but the workers want something

more—very often want it without knowing what it is they want.

"And all they want is this—an interest in their work, in the ultimate use of their productions, a knowledge of what they are working for, of seeing or hearing about the result of their labor.

"I am not theorizing on this. I know it and have ample proof of it.

"Ask any of the firms that were building racing cars before the war, and they will tell you that labor troubles washed out when it was a case of getting a car built or tuned up for a race.

"Men then didn't care what hours they worked or what pay they got; they merely wanted their car to win and to know what happened to it.

"During the last year of the war I had an opportunity given me of coming over from France at intervals and lecturing to the aircraft workers.

"I suppose I went to every factory of any importance in this country, and there was one thing I found the workers always wanted to know—what were their particular productions doing in the field.

"They were interested enough in air work generally, but they were not satisfied unless I could tell them tales of what was being done with the machine or engine or magneto they were making there in that factory.

"And their pride in any special achievements of their productions was something wonderful. An hour's talk on the subject sent them back to their work with greater heart, with a new interest, with a fresh zest.

"Their job had risen from the low level of a mere matter of so many hours' work put in, so much pay earned. They knew the results of their labor, had gained a satisfaction and pleasure in their achievements they had not known before. (Remember some factories had been building thousands of machines and up to then had never heard one word of them after they left the works. Other factories had been making engines or parts, and the workers had never as much as seen a complete assembled aeroplane.)

"And all the interest, enthusiasm, and pride of achievement roused simply by 'telling the workers' had a practical result.

"In factories where careful count was kept of daily output it was seen that the figures rose appreciably after one hour's talk.

"Keen progressive firms found that it paid them to knock off work, shut the factory down for one or one and one-half hours, and pay the workers full time as well as lose the hour's output, so that I could talk to them for an hour. And the firms found that they got back their hour's time and money in increased output in very short time.

AN INTERESTING STORY ABOUT EVERY TRADE

"I know that employers may say that it is a simple matter to interest the workers in such sporting work as building a racing car or by telling them the result of war work, but it is going to be an impossible task equally to interest them in the production of bicycle wheels, or boots, or button-hooks, or scores of other ordinary articles of commerce.

"But this is wrong. I cannot imagine any trade or manufacture about which there is not an interesting story to be told.

"And at least I know of scores that offer great possibilities, and where not the slightest effort is being made to rouse the interest of the workers in their work.

"There is always plenty that could with advantage be told the workers, plenty of ways of rousing their interest, getting them to feel that they belonged to the business just as much as the manager or heads.

"I suppose it will be admitted that any business, factory, or works manager worth his salt is keenly interested in his business, takes a pleasure in it, thinks about it in and out of hours, is always on the lookout for ways and means to push the business along.

"Why is it? Simply because he knows every detail of the working, discusses it in all its bearings with other heads of the business, feels that it is his business, that he belongs to it and it belongs to him.

"On the other hand, how many workers feel the same about the works? In most cases, practically none.

"And again, why don't they? Just because they are kept deliberately in the dark about the details of the business, find, without knowing a bit why, that hands are taken on or paid off, that they are being driven and urged to speed up at one time, that there is no special rush another time, are kept on running a lathe or a machine and turning out parts which they may never see assembled.

"A manufacturer will pay an expert to think over and shape up with the utmost care a notice to the public about goods or prices, but will sit down and dash off a notice to be posted around the works laying down some rule about hours, or pay, or shop stewards, and convey his meaning in such a way as to cause friction and ill-feeling and misunderstanding enough to cost the firm a small fortune. (This, as you know, is no fancy picture. It has happened all too often recently.)

"A good business house will lay out endless thought and time and energy and money to discover its customers' line of thought, to find out what they want, what they eat, or wear, or play at, what papers they read and thru what media they may be influenced—and then will spend more time and money and energy to influence them.

"But the same house probably hasn't a ghost of an idea what its workers want, what they read, what they think, how they can be influenced, or how useful knowledge may be brought into their heads. And yet the one thing can be done just as well as the other, and *it would pay the house to do it.*

GIVE THEM A LIVE, HUMAN INTEREST IN FIRM

"Tell the workers; tell them some of the ins and outs of the business, the selling difficulties and triumphs, a good stroke in buying raw material, a struggle to secure a contract. Give them a live, personal, human interest in the firm and in their work as far as you possibly can.

"Tell the workers what happens to their productions and about any part, however small, their products are playing. They don't know who buys their products, where they go, what happens to them. They are human beings, and yet they are treated exactly as machines.

"If a manufacturer hears of a big contract he thinks he

may secure, what does he usually do? He calls the different heads of departments together and threshes the matter out with them and tries to inspire them with the scheme.

"And if he has got a decent team he does inspire them, and they go away full of plans for cutting down cost of pushing up output, as keen as the chief himself to hook the contract for the firm and put it thru successfully.

"But how many manufacturers would think of calling their workers together, explaining the whole business to them, asking them to back his play?

"Team work always wins, but you can't have real team work when nine-tenths of the team don't know what and where the goal is. So, tell the workers, give them all the confidence you can, let them see what you're playing for, and that the interests of the firm are their interests."

GIVE IT A TRIAL

Now whether you agree with what Cable says or not—you *will have* to admit that to follow his advice—to give the thing a trial will not cost a penny.

And let me go a step further than Cable.

Going back to the forerunner of the modern factory we find that the original manufacturing plant was a room in the employer's home. There he worked with his helpers—sometimes only the members of his own family, sometimes one or two apprentices, sometimes skilled workers and apprentices. Not only did he know all about his employees—their likes and dislikes and peculiarities, but he knew their families. The relationship between employer and employe was so close that labor troubles were unheard of.

As the modern factory idea was evolved the employer gradually drew farther and farther away from his employees, until today, even in a moderate sized plant, the superintendent does not even know the names of all of his men.

The clayworking industry, as a rule, is composed of small or medium-sized plants—plants which will average, say, under two hundred employees. In plants of this size there is no legitimate excuse for the active head of the plant being out of *personal touch* with every man on the job.

Yet how many managers or superintendents or even foremen in this industry know where their employees are living, how they are living, whether they have children, whether they have illness at home or any of the other intimate things that concern them.

I know that on a big plant it would be impossible to keep track of all of these things but *it is not impossible on the average clay products plant.*

Nothing touches a man's vanity more than a word of inquiry as to the health of his family or the welfare of his children, and when the boss stops for a moment and asks a question the average employe is "tickled to death."

Any employer knows that the men he is friendly with, the men he stops and talks to for a moment or two occasionally, are the men who will stick to him when there are labor difficulties—somehow he knows without their telling him that these chaps feel a closer personal relationship to him.

GET ACQUAINTED WITH YOUR MEN

Well, what's the answer? Simply this: Make it a point to get better acquainted with your men—stop a minute as you walk thru the plant and say a word or two as you pass—find out before hand something about the man (if you don't know him), so that what you say makes a "bull's eye." Ask about that youngster who has just started to school, or how the baby is getting along. How the wife is feeling after her recent illness or how the election is going to go up in his ward. Then watch the pleased and surprised expression on his face. I don't care whether he is an American

or a Slav, that man will thereafter have a different feeling towards the "boss."

You know and I know that if your workers are friendly towards you they will not "stab you in the back," they will not listen to agitators and they will work for you in times

of stress when the other fellow is doing his best to take them from you.

Try it out—*the time has come when you must try something* and following these suggestions—old as they are, simple as they are—will cost you nothing but the effort.



LOW SUPPLY, HIGH PRICES, *in* N. Y. MARKET

BUILDING INTERESTS have been attacking the high cost of construction from a new angle since the turn for the better came in the general construction market, says the Dow Service daily building reports of October 27.

Important financial interests have been in the market in the form of special corporations seeking advantageous positions with regard to the supply of essential basic building materials for use in contemplated building projects and according to various authorities some important transactions in the line of certain construction commodities have been made in anticipation of heavy winter demand. Some of these forward options have been closed to run into the middle of next year. It was explained that the reason for the unusual activity in this regard is to discount as far as possible any contingency that might arise in the form of a railroad trainmen's strike or other disturbance that would interfere with the normal flow of building material toward this market next winter and early spring when it is now expected that the volume of projected building will drain heavily available supply, especially in departments like lumber, some clay products, soft stones and supplemental materials like pipe, electrical appliances and power equipments.

Indeed, the volume of big work that is coming out at present is reflected perfectly in the present attitude of all the basic building materials. Hudson River common brick at \$16 a thousand, wholesale, dock New York with the usual extra charge for handling, cartage and 15 per cent. for delivery in this city, closed the week exceedingly strong and it seemed to be the impression in the retail as well as the wholesale trade that this price will not be held at that figure much longer.

HOLLOW WARE LEADING OTHER CLAY PRODUCTS

The behavior of the hollow brick department toward the week end certainly indicated something of the strength of this part of the clay products market. Raritan hollow brick advanced and Haverstraw hollow brick also pegged up so that the best average quotation for the market today is approximately \$18.75 instead of \$15. At this time of the year and in normal conditions hollow brick would be probably the most stable element in the market. It now is leading other clay products.

Hollow tile partition blocks were scheduled for price advances at the week end. Official price lists will show a change upward effective some time this week. This advance, which on Saturday seemed sure to materialize, reflects primarily the larger movement in the direction of big building work.

Structural steel fabricators say they have an increasing volume of work offered them for figures and even tho the steel strike still follows its desultory course, a considerable volume of tonnage is being placed subject to price adjustment. As the strike draws to a close premium offerings are expected.

The present yellow pine situation fairly represents the remainder of the building material market for low supply

and high prices with a marked tendency for continuation in the latter.

It is evident from the continued advance in price of yellow pine during the last six months that there must be some sharp causes for this fluctuation. The South, during the last winter and spring experienced severe winter conditions. They have not been equalled for many years. The yellow pine districts were drenched with rain, making lumbering difficult and expensive, and when good weather came at intervals even day and night operations of the mills proved ineffectual in keeping the supply where it should be. This proved to be only a temporary situation and when the price in this market kept continually advancing it became evident that something was wrong fundamentally with the industry as the New York consumer and distributor was inclined to view it.

At the time ships were being released from the Government service it has since been revealed, the southern mill owners were offered high prices for timbers which were needed in rebuilding parts of France and in English mines. The high prices and easy manner of manufacturing their logs into products of this sort offered a quick solution to the southern mill owner confronted as he was by demands for shorter hours and higher wages. He simply eliminated the short hour workman because he found it cheaper to ship logs abroad than to send boards to this market, and he could get his cash on bill of lading, dock. It was only necessary to square their logs into as large timbers as the log would permit and deliver them to the ship.

EXPORTING YELLOW PINE CAUSES HIGH PRICES

In the manufacture of flooring, ceiling, partitions, rafters and other yellow pine commodities it is necessary that more time and labor be expended and also more machinery employed than is required to square logs into timbers. This proved to be the short cut adopted by the southern lumber manufacturer to meet the demand for shorter hours and higher pay and the New York consumer and distributor has a shortage in these commodities to contend with in consequence.

Pine interests in New York say that until the European demand lessens and some change is made in freight rates to New York it is inevitable that continued high prices will prevail in yellow pine building materials.

Other departments of the building material market report the same strengthening demand that has developed within the last three weeks for basic materials. In supplementals there is an exceptionally strong demand for tubular goods. Pipe mills that have been handicapped by the strike are now rounding into shape in time to relieve some of the strain that has been placed upon jobbers' stocks. An advance in price of all tubular goods is expected to be announced this week. The advance will be 5 per cent. on butt and 10 per cent. on lap. Best advices counsel against holding specifications for first quarter requirements, but to take as much against contract as can be obtained.



MR. AND MRS. WM. MILLER

ROOFING TILE PRODUCER TELLS *of LOCAL VISIT*

Australian Manufacturer Who Has Just Completed an Inspection of American Plants Tells in Interview How He Would Make Roofing Tile Here

AMERICAN CLAY PRODUCTS manufacturers have been the honored hosts for the past three months to Wm. Miller, an Australian clay producer, who accompanied by his wife, has called upon and inspected a large number of clay factories in the United States. Mr. Miller is an architect with twenty years' practice in Australia and for the past five years has been engaged in the roofing tile industry in that country as general manager and secretary of the Eureka Terra Cotta & Tile Co. The factory of this concern is situated at Ballarat, seventy-five miles north of the metropolis, Victoria-Melbourne.

An unusual feature of this company is that it uses clay from certain deposits of abandoned sluicing and dredging claims by means of the ordinary sluicing operation. These clays have been disintegrated from their accompanying gravels and other hard foreign substances, emulsified, crushed, turned over and graded by precipitation thru water so that the grosser and heavier substances have fallen to the bottom. There thus remains upon the surface the lighter and finer clay of a workable nature having a gritless, creamy character of remarkable ductility with a suitable toughness. These clays have been found to be non-adhesive to molds and dies and are eminently suitable for the manufacture of roofing tile and terra cotta.

During his sojourn in this country, Mr. Miller made his headquarters largely with *Brick and Clay Record* to which he stated, "We appreciate your paper in Australia as the most practical journal in the world published in connection with brick, terra cotta and refractories." Inasmuch as Mr. Miller has had an opportunity to see how the clay business is conducted in this country, *Brick and Clay Record* put several questions to him relative to the clay industry in the United States and in Australia.

WAGES FIXED BY A COMMITTEE

When asked about a comparison of the industries, Mr. Miller replied, "It is impossible to contrast our industry with yours unless you know considerable more about Australia and the conditions applying than the average person in the United States. By comparison to get an adequate idea of the relative stand, Australia is a continent (island if you like) about three hundred thousands square miles greater in area than the United States with a population of

about five and one-half million people, equal to that of the State of Ohio."

When asked about the labor supply and conditions in Australia, Mr. Miller answered, "We have no colored population and practically no foreign population, and consequently no surplus of labor. The greater part of the population is grouped in the capital cities of the various states. The wages are fixed by wage boards appointed by the government consisting of three employers on one side and three employes on the other, presided over by a police magistrate. When the wages are fixed they are so gazetted and the minimum wages stand for a year. Labor with us is based on a minimum wage rate of \$15.00 a week. Living costs are correspondingly much cheaper than in the United States.

Upon asking Mr. Miller what he thought of the development of clay products production in the United States, he answered, "The United States of America is in my opinion well ahead of most countries in clay manufacture, more particularly in the crude clay manufacture, namely, brick and hollow ware. I visited quite a number of plants and was surprised at the output of tile with the small amount of men employed. On architectural terra cotta the work was also more advanced and all of these lines are open for introduction in our country as neither hollow ware nor



Entrance to a Lodge of Domestic Gothic Architecture, at Melbourne, Australia.

architectural terra cotta are used to any great extent. I also visited a number of white earthenware and white china potteries which I found to be very modern and interesting. I received every courtesy and information from the works visited and from Professors Orton and Bleininger, whom I also called upon.

COAL MORE EXPENSIVE IN AUSTRALIA

"What surprised me most in visiting the plants was the wonderful natural resources of the United States, namely, the natural gas and coal supply of most of the works visited, and consequently, the low cost of burning. The fuel it seemed to me was handled rather carelessly and there was considerable waste. By comparison, we have only coal for burning and it costs us \$9 a ton, yet the average cost of tile in our country would not be more than \$65 to \$70 per thousand.

"Unfortunately I did not have the opportunity to inspect any producer gas plants working on terra cotta kilns, and from what I can learn I still have doubts as to whether it could be successfully or more economically employed than by burning coal in open fires, more particularly, with coal at your present prices. I was very much impressed with the Dressler car tunnel kiln in operation at the Mossaic Tile Works, Zanesville, Ohio, which is fired with producer gas."

In regard to the use of roofing tile a natural question was, as to the demand for this product in Australia, to which the reply was given, "The city adjacent to our works, Melbourne, has a population of about 750,000, a town about as large as Cleveland, but even a more modern city than that. In this town at least ninety per cent. of the dwelling houses are roofed with terra cotta tile and practically all of the French patent tile are being used (Marseilles), and there are twenty-two different factories making roofing tile. Quite a number of these make tile only as a side line, but are being principally engaged in the manufacture of brick, sewer pipe and general pottery. The factory requirements for roofing purposes allow an over supply and the above tile is the only one used (other than the $10\frac{1}{2} \times 6\frac{1}{2}$ inch English shingle tile with bonded hips and valleys which is made solely by the Eureka Terra Cotta & Tile Co.)."

AMERICAN ROOFING TILE FACTORY HIGHLY DEVELOPED

Believing that it would be of interest to know something about the comparison of the relative factory methods in the roofing tile industry of the United States and Australia, the question was put to Mr. Miller who answered, "There can be no comparison. The Ludowici-Celadon Co.'s factory (manufacturers of roofing tile), which I visited at New Lexington, Ohio, is well ahead of anything in our country, but

making a different article. Their principal roofing tile product is Spanish tile and interlocking shingle tile and they also make a German patent tile similar to the French tile. None of these designs are used at all in our country but the



English Shingle Tile With Bonded Hips and Valleys.

Spanish tile and interlocking shingle tile could be introduced to much advantage. To my knowledge there are no other tile factories in the East except the tile plant at Huntington, W. Va., so that there is practically nothing else to make comparison with. (I believe there are two in the West, one in San Francisco and one in Los Angeles and also one at Coffeyville, Kans.) It seems remarkable to me that more success has not been met with in the manufacture of roofing tile in this country.

"I visited one defunct plant at Lima, Ohio, and from my observation, concluded that if other plants started in such an elaborate way before being sure of what they could make, it is no wonder they are failures.

"Professor Orton in his book on roofing tile mentions quite a number of factories inspected by him; however, I could not find any more than two of these now working on roofing tile."

Realizing the difference in climatic conditions between the two countries, this matter was brought to Mr. Miller's attention, to which he replied, "The conditions for roofing in our country are very dissimilar from yours inasmuch as we do not get the severe weather in the winter months that you have. It is rarely that the thermometer registers below zero, and there is practically no snow in Australia. The consequence is that in our country we can use roofing on open battens without any roofing boarding or building paper. In consequence of this, we do not have to burn the tile to vitrification as seemingly has been found necessary here."

POSSIBILITY OF ROOFING TILE IN THE UNITED STATES

Brick and Clay Record also asked Mr. Miller what he thought of the possibility of extending the roofing tile industry in this country, to which he gave the following answer:

"In spite of what I have been told I believe it will be possible to construct a satisfactory roof without boarding or underlining, provided the roof is given sufficient pitch. However, even if the boarding and paper be found necessary it should not prove detrimental to the introduction of the tile, as practically every roof of any other material has to take this precaution. The tile could be easily introduced in the vicinity of large cities much cheaper than it can now be supplied provided the person who likes the town undertakes the superintendence of the tile roof construction and sees that it is properly done."

Believing that a good many readers of the journal are interested in this question, Mr. Miller was asked how he would



The Aim of the English Architect Is To Get the Rough Effect in Roofing Tile.

undertake the manufacture of roofing tile if he were a clay products manufacturer in this country. He said, "If I were a manufacturer of hollow ware or face brick in any town adjacent to a large city, I would install a pentagon rotary press and make French patent tile. The French patent tile is certainly the best tile for any manufacturer to start with, as it covers nearly seventy-five per cent. of its area and a roof can therefore be more cheaply covered by it than any other tile. The pentagon rotary press is the only machine that would be required other than the equipment already at hand, and all that is necessary is to equip the auger machine with a die and a small automatic cut-off worked by the column of clay to cut off the batch required for pressing. A full

description of the method of manufacture is obtained in Professor Orton's book on the manufacture of roofing tile. Drying trays are made to suit the shape of the tile and the rest of the process of manufacture is the same as used for hollow ware. The setting is also described in Professor Orton's book. Experimental burns could be made mixed with hollow ware. My advice would be to go slow, put up a few roofs and gain your practical experience from the results in the immediate district of your factory without attempting to extend until you are thoroly sure of your ground. It should be possible to manufacture roofing tile in America so that the cost could be in the neighborhood of \$25 per hundred square feet roof area."



MANUFACTURING SLAG-LIME BRICK

by a NEW PROCESS at ILLINOIS PLANT

BRICK MAKERS AND CERAMISTS will be interested in learning of a plant that was built and equipped recently to manufacture slag-lime brick. The plant is located at Clearing, Ill., on the outskirts of Chicago, and is operated by the Silica Brick & Tile Co.

Slag-lime brick is made in practically the same manner as sand-lime brick, altho the process used by this concern is different than that generally practiced in sand-lime brick manufacture. The slag is obtained from steel mills and is received in a fairly fine condition. The hot slag as it comes from the furnace has a sheet of water sprayed upon it which cools it rapidly and causes it to crack up in a manner similar to glass when it is heated and water played upon it. The slag falls into a trough of water and resembles in size and appearance, a glaze which has just been fritted.

This material is dried and shipped to the Silica Brick & Tile Co.'s plant, where it is dumped into a hopper and elevated by means of a bucket elevator to large storage hoppers.

A definite amount of this material, together with a specific amount of ground lime is placed in a large steel

which process a thoro mixture is obtained. This material is then passed thru a machine resembling in appearance a dry pan, its mullers each weighing two tons. This step is made in order to take out any lumps that may have been formed. From this machine the raw material is introduced into a press containing a number of molds. These molds are filled with the raw mixture, and at the proper moment the pressure equivalent to four hundred tons exerted, thus forming a very hard and compact brick.

The table of the press is revolving continually and the machine works automatically. Two men remove the brick from the press and set them on cars, each car holding 1,000 brick. Cars are then immediately placed in long iron tubes called boilers measuring 67 feet in length and 6 feet and 1/2 inches in diameter. Each boiler holds seventeen cars. The boilers when filled are sealed tight and steam at a definite pressure introduced.

This is the hardening process and requires about eight hours' time. The brick are then removed and are ready to be shipped.

It is claimed that with the proper slag and lime, brick made according to this process can be manufactured at a cost less than clay brick.

The brick are made with practically no loss in manufacture. They are somewhat heavier than clay brick. They are regular in size, of a gray-greenish color and are said to be especially adapted to use in exposed locations and where great crushing strength is required.

The absorption test is low enough, and the compression tests show up well, as is shown by the following tests which were made by Robert W. Hunt & Co., engineers.

CRUSHING TEST

Dimensions under compression.....	4.05 in. x 8.33 in.
Height as tested.....	2.20 in.
Area under compression.....	33.74 sq. in.
Maximum load.....	100,440 lbs.
Crushing strength (lbs. per sq. in.).....	2,977 lbs.
Failure	Regular

48-HOUR ABSORPTION TEST

Weight before immersion.....	2,449.4 gr.
Weight after 48 hour immersion.....	2,652.4 gr.
Weight of water absorbed.....	203 gr.
Per cent absorption in 48 hours.....	8.29%

A fire test was made on a sample slag brick submitted, the test being conducted in the following manner:

The brick was laid flat in the cold furnace and the temperature gradually raised in a period of five hours and thirty minutes to a maximum of 2488 deg. Fahr. At 2450 deg. Fahr. the brick fused practically to a liquid.



Factory of the Silica Brick & Tile Co. The Brick and Roofing Tile Used in the Construction Were Made According to the Slag-Lime Process.

barrel holding sufficient material for 2,500 brick. The lime is usually a high calcium lime and must be of a certain degree of purity. The steam is projected into this barrel and the barrel then rotated for about one hour, during

Besides making brick, this company also proposed to make roofing tile, coloring it with artificial coloring matter



Crushing Rolls Shown on Platform Above; Machine Which Forms Brick, Using 400 Tons Pressure, Illustrated on Main Floor.

which produces a very attractive looking article and apparently holds its color very well. Part of the factory, which is illustrated herewith, was roofed with this material and after being subjected to the weather for a couple of years still shows up well and indicates good possibilities for this material.



Nebraska Assn. Holds Quarterly Meeting

Discussions at the quarterly meeting of the Nebraska Brick & Tile Association, which was held at the Hotel Lincoln, Lincoln, Nebr., revealed the fact that that section of the country is very much in a similar position to the central and eastern parts of the country in regard to supply of brick.

At the above mentioned meeting Secretary Ringer called attention to the fact that practically every plant in the state of Nebraska had completely sold the 1919 output and that there would be no supply whatever to start spring work with, which must therefore wait until plants begin once more to produce. The importance of increasing production by every plant in the state was also pointed out.

The secretary presented for discussion the question of the kind of a program desired for the annual meeting, which will be held in January. It was suggested that it might be possible to hold the meeting under the direction of the Ceramic Department of the University of Iowa.

Quite a number of manufacturers felt that it would be

better to hold the meeting in Lincoln with such help as the University of Nebraska could give at the association's expense, bringing in such additional assistance from other schools as might be advisable.

On motion, the following committee was appointed to have charge of the program plans with power to act: O. R. Martin, R. D. Ferguson and F. I. Ringer, all of Lincoln. Three suggestions for the program were submitted to the committee for full consideration:

1. Each plant to provide sample of clay for chemical analysis and tests.
2. Arrange demonstrations in some equipped laboratory of clay tests, that each one be taught methods of testing own clay for proper combinations.
3. An inquiry to members to ascertain their wishes as to kind of program to have.

A report was made by A. H. Farrens, chairman of the advertising committee on the State Fair Exhibit, in which particular attention was called to the fine list of prospects sent each member.

The approximate expense of the exhibit was \$350. A discussion was also carried on as to the advisability of carrying a page advertisement in the Christmas number of the "Nebraska Farmer." Everyone expressed himself as fully satisfied with the results obtained from previous advertisements, saying that it had unquestionably created a demand for brick and tile for farm buildings. On motion, the advertising committee was instructed to use the back page of the Christmas number of the "Nebraska Farmer."



Urges Prompt Enactment of Americanization Measures

The senate labor committee returned to Washington October 13, after investigating steel strike conditions in western Pennsylvania, determined, first of all, to urge the prompt enactment of Americanization measures.

Senator Kenyon, chairman of the committee, declined to discuss the strike in any way, but said he was convinced that Congress must enact legislation to teach the English language and knowledge of American institutions to the foreign element in the steel mills. Fifty per cent. of the workers in some of the mills cannot read, write, or speak the American language, he said.

The senator issued this statement: "The committee returned from the Pittsburgh district strongly in favor of some Americanization bill. I have thought for a long while that Congress must do what it could to help stimulate Americanism. That is a common ground, upon which we all can stand, and is a rallying point for all. When you find that in some of these mills over 50 per cent. of the workmen cannot read, write, or speak the American language; when it is necessary in these mill districts to publish orders in all kinds of languages, it is time for the American people, represented by the American Congress, to give consideration to some plan of affording these foreign citizens an opportunity to learn what the institutions of America stand for and to become Americanized.

"We saw young fellows who only had a smattering of our tongue, who impressed us as splendid material out of which to make American citizens.

"Eight and a half million people in this country over 10 years of age cannot speak, read, or write the American language. To the correction of that condition every citizen should resolve to do his part."

UNCLE SAM *is* SHOWN WHERE *the* RAILROAD RATE SHOE PINCHES

*"Exhibits" and "Horrible Examples" Furnished A-Plenty by Clay
Products Manufacturers to Interstate Commerce Commission*

By Waldon Fawcett

STUNG BY A "from Missouri" attitude at the Interstate Commerce Commission, Francis B. James as representative of the allied brick and tile interests has just filed at Washington a supplementary petition that ought to convince the railroad tribunal, if anything will, that the clay products industry is, as a whole, hampered and hobbled by discriminatory freight rates. The petition, as *Brick and Clay Record* readers will understand, is designed as an appendix or annex to the formal plea for relief that was submitted last spring on behalf of the triple alliance made up of the National Paving Brick Manufacturers' Association, the American Face Brick Association and the Hollow Building Tile Association.

It has been the feeling of virtually every man in the industry that the arrangement of railroad rate inequalities presented some months ago in an effort to have the Commerce Commission step in was so conclusive that any impartial jury would have to vote for conviction without leaving the jury box. However, the fact remains that this broadside, eloquent as it was, partook principally of general statements with reference to rates rather than the citing of specific instances. That is where the Commerce Commission found its opening to call for sample "exhibits" or "horrible examples."

POSITIVE PROOF FURNISHED

Following the filing of the original petition to which the entire clay products industry pins such faith, Mr. James held conferences with a member of the Interstate Commerce Commission who will have much to do with the ultimate consideration and disposition of this case and as a result of these conversations it was decided that on behalf of the trade there should be set forth to the Commission a number of appropriate typical instances of particular brick rates whose level is attacked and a similar number of instances of existing rates attacked by reason of undue prejudice or disadvantage resulting therefrom. The questionnaires which were some time ago circulated among brick and tile men by the general committee representing the three sections of the trade have been the means of marshaling just such intimate facts as there was expressed wish for at the Interstate Commerce Commission and in consequence there has now been laid before that body the brass tacks data that ought to clinch what has already been said in the same quarter.

Picking out the tender spots where the railroad rate shoe pinches it is, at the outset, pointed out that the manufacturers of face brick, paving brick and hollow building tile located in western Indiana at Crawfordsville, Terre Haute,

Cayuga, Brazil and other manufacturing points in that vicinity, claim to be subjected to an unjust discrimination in favor of Danville, Ill., in their rates to Wisconsin, Minnesota and the northern peninsula of Michigan. The maximum difference in mileage between the plants in Indiana and Danville is 54 miles. In 1915 the differential in favor of Danville was 10 cents per ton. The present differential in favor of Danville is 40 cents per ton. To Western Trunk Line destinations, Danville has differentials under the Indiana plants to Terre Haute of from 40 to 70 cents on shipments to the west while on eastbound shipments Danville has the same rates as Terre Haute and the other Indiana cities. Where there are proportional rates on Danville, the differentials vary from 30 to 40 cents per ton in favor of Danville. The western Indiana manufacturers also complain of discrimination in favor of Kansas City on hollow building tile shipments to Memphis and New Orleans in that for the haul of 484 miles from Kansas City to Memphis the rate is \$2.90 while from Terre Haute to Memphis for a haul of 404 miles the rate is \$3.80.

One of the high spots touched by the supplementary petition is found in the predicament of the manufacturers at Alton, Ill., who complain of discrimination in favor of Albion and Murphysboro, Ill., to East St. Louis and Granite City, Ill. For a 23-mile haul from Alton to East St. Louis the rate is 60 cents per ton plus switching of 10 to 20 cents per ton, while from Albion 131 miles the rate is \$1.00 and from Murphysboro, a 90 mile haul the rate is 90 cents, which latter rates include switching. The same is true at Granite City.

Turning to Missouri territory the indictment on behalf of the trade points out how plants at Diamond, Mo., on the Missouri Pacific, are discriminated against in favor of points in the Kansas Gas Belt to the southeastern portion of Nebraska. Using Omaha as an example, it is recited that the rate from Diamond is 8 cents per hundred pounds for a haul of 213 miles while from the Kansas Belt to Omaha, for distances ranging from 360 to 397 miles the rate is 9½ cents per hundred pounds. Equally flagrant discrimination as against the Diamond plants and in favor of the Gas Belt plants is instanced with respect to shipments to Kansas City. Here the figures that are set in deadly parallel show a rate of 7 cents per hundred for distances of from 164 to 197 miles in comparison with a rate of 3 cents per hundred from Diamond to Kansas City, a distance of only 13 miles.

SOME FLAGRANT EXAMPLES

How the beneficiary in one case of rate inequality is the victim in another is well illustrated by the predicament of

brick interests at Streator, Ill. On the one hand we have Gilchrist, Ill., complaining of discrimination in favor of Streator on traffic moving to Rock Island, Moline and Davenport while on the other hand we behold Streator kicking with equal vigor against the deal it has been handed with respect to rates to points in Wisconsin. For shipments to Wisconsin, Streator has to pay the same rate as Danville and yet the haul from Streator is shorter by all the way from 78 to 117 miles according to the destination in Wisconsin. What an endless chain the present inequalities induce is further illustrated by the circumstance that Galesburg manufacturers are, in turn, as peeved with Streator as Streator is with Danville.

Jumping down south in their survey, the protestants in behalf of the industry bring into the limelight the situation at Sibleyville, Ala., which suffers from discrimination at the hands of Nashville, Tenn. Claim is made that the intrastate Mississippi brick rates discriminate against the interstate rates from Alabama to Mississippi points and that to South Carolina points the intrastate rate is on a lower basis than the interstate rate from Sibleyville. Turning to New Galilee, Pa., we hear a grievance against producers in the Valley district, Ohio, because to eastern points the rates from New Galilee are 30 cents per ton higher than quoted to competitors whereas on business to the west, New Galilee has only a 10 cents differential under Valley competitors. Or again, for a particularly flagrant example of rates as they ought not to be we have the spokesman for the trade throwing on the screen a picture of the discrimination as against Olean, N. Y. on the part of Wheeling, W. Va. manufacturers who ship to northern New York points. Here

the hauls from Olean are 300 miles shorter and yet Olean pays a rate 30 cents higher than the more distant Wheeling.

A very interesting cause of dissatisfaction in the trade that is revealed thru the filing of the supplementary petition is that practice ascribed to many railroads whereby rough texture face brick is permitted to be shipped as common brick while pressed brick is given higher rates. It may be of interest to lift at random from among the cases cited in this comprehensive petition a couple of samples of the minor irritants that can prove to be thorns in the sides of brick men who are injuriously affected. For one example there is the grievance of Waterloo, Virginia, producers against the Pittsburgh district when the two producing districts compete for New York and New England business. To Boston the rate from Waterloo is \$4.10 for 460 miles while Pittsburgh shipments are laid down at a lower rate being carried 600 miles for \$3.90 per ton. Or again, pity the plight of the producer at Winslow Junction, New Jersey, when he begins to figure against competitors in Pennsylvania on brick for delivery in Maine, Rhode Island, New Jersey and New York. To Portland, Maine, for example, he faces a rate of \$4.00 for a haul of 456 miles from Winslow Junction whereas his competitor at Rochester, Pa., enjoys a rate of \$3.90 for a haul of 801 miles. When shipping to New York the New Jersey producer has to pay a lighterage charge of 70 cents per ton whereas no such toll is taken from his competitors in Pennsylvania. Numerous as are the examples set before the Commerce Commission it is claimed that not scores but hundreds of equally convincing examples can be brought forward if the arbiters at Washington think that such inequalities are not epidemic.



EXECUTIVE COMMITTEE of NEW JERSEY CLAY WORKERS *holds* IMPORTANT MEETING

AN INTERESTING and important meeting of the New Jersey Clay Workers' Association and Eastern Section of the American Ceramic Society was held at the residence of Charles A. Bloomfield, Metuchen, N. J., Saturday afternoon, October 18, to arrange details for the next annual gathering of the organization, to be held at New Brunswick in December, as in years past. The splendid old Bloomfield manor lent an inspiring atmosphere to the meeting, and coupled with the fine hospitality of genial Mr. Bloomfield, so well and prominently known in ceramic circles, brought about a delightful and enjoyable, as well as distinctly profitable session.

Charles Howell Cook, head of the Cook Pottery Co., Trenton, N. J., and president of the association, presided, conducting affairs with his usual keen perception and "right to business" attitude. In opening the meeting, he gave a comprehensive and illuminating talk on the urgent need for practicability in every activity of the organization, saying that to mix the practical with the technical in just the right measure would, to his mind, bring the best results.

"In connection with our next general meeting," said Mr. Cook, "and in fact, in all future meetings, I would recommend that we do everything possible to interest and enlighten the 'man on the job'; this is the man who we should try and get to our meetings and when he is there, give him such 'good stuff' that he will want to come again—he will tell his friends about it, too, and they will join him the next time. This is the way to bring about 100 per cent.

efficiency, to build our organization to the limit, and make for the greatest degree of success.

"What I am particularly driving at is this—we should take up everyday problems, matters that vitally concern different features of operation at our potteries and ceramic plants, and discuss these fully. In this way, the best will be brought out, we will get valuable information for immediate service and all return home as wiser men. With such able minds as we have in our membership, I am sure that this easily can be accomplished, and I think that now is the time to start. Short, expressive papers on pertinent topics and plenty of discussion is the way to do it, and when we get the men there, we must make them talk. But in *our* talks and in *our* discussions, we must not go 'over their head.'

"In talking with George E. Hoffman, secretary of the Monument Pottery Co., Trenton," continued Mr. Cook, "he has suggested that the subject of 'kiln firing' is a very important one and worthy of considerable attention at our next meeting. I agree with him; I think that we ought to make this one of the principal topics, with about an hour's round-table discussion, if possible. And we should do our best to get the kiln firemen, the men doing the work, to this meeting. There is not enough appreciation and thought given to tunnel kiln firing, for real scientific firing will go far to reduce the coal bill and eliminate ware loss. Men are earning \$40 a week now in this capacity, and really good men can probably get more, for we are all after them. In other words, if a man can handle the job right, the wages

follow. Again, it is probably the least fool-proof of the majority of regular operations at the ceramic plants, and altho an everyday subject, seems rather neglected. More-



Executive Committee Gathering, New Jersey Clay Workers. Reading from Left to Right, Bottom Row: Abel Hansen, Senator Brown, Andrew Faltz, Charles Howell Cook, August Staudt, Charles A. Bloomfield, E. C. Stover. Top Row: Charles T. H. Phillips, Professor George H. Brown, Roy H. Minton, F. A. Whitaker, Howard Bloomfield.

over, the quality of coal has considerable to do with the matter, and our coal supply at the present time certainly is not running quite like we would have it. All in all, its a big, fundamental topic, I think, for the next meeting.

"There is still another matter I would like to speak about, and that is regarding our young men and our ceramic school at Rutgers College. I do not think that these young men in our different plants fully realize the big advantage of a ceramic education, and I think it is up to us to impress it on them. I want to see that ceramic school with a fine group of young fellows, for it means a lot to us all; these are the men whom we must depend on in the future. Professor Brown tells me that he has recently received a large number of applications from various companies for technical men—and they can't be supplied. Our boys can get an education here practically free, and they are not taking advantage of the opportunity. I hope that a real move will be made in the right direction in this matter, that we will select the right caliber of young men from our plants and send them to this school."

In his concluding remarks, Mr. Cook made a strong point of the possibilities of foreign competition, particularly from Japan and Germany in the matter of chinaware and other ceramic products. He is of the assured belief that keen competition is on the way, with prices far below those of the American manufacturer. Every effort will have to be made to off-set this condition by right tariff laws and other measures, for the American producer must be protected—at least, if prosperity is to continue under existing high wage scales.

DECEMBER MEETING

Following the able and inspiring address of Mr. Cook, a resolution was made and approved to hold the annual meeting of the association in the Fine Arts Room, Queens

Building, Rutgers College, on Thursday, December 18, with morning and afternoon sessions.

In the matter of papers, it was voted to have two or three technical presentations on important subjects, with other papers given over to the practical, operating side of the ceramic plant. Two subjects decided upon for this latter group were (1) Kiln Firing and (2) Tunnel kilns, and well informed, practical men will be asked to talk on these topics. A program committee composed of Professor George H. Brown, director, Department of Ceramics, Rutgers College, New Brunswick; Charles A. Bloomfield, Metuchen, N. J., head of the Bloomfield Clay Co.; and Abel Hansen, head of the Fords Porcelain Works, Perth Amboy, N. J., was appointed by President Cook.

Arrangements will be made for a luncheon for members at Hotel Klein, and in accordance with the suggestion of Mr. Cook, it is planned to arrange the seating so that those in kindred line of business will be together during this intermission in the sessions. The committee in charge of this and other features of the gathering will comprise Professor Brown, Mr. Bloomfield, and August Staudt, president of the Perth Amboy Tile Works, Perth Amboy, N. J.

It is hoped to make this one of the largest and most successful meetings yet held by the organization, and in order to have practical men present, whether members or non-members, in the greatest possible volume, Mr. Cook urged extensive promotion of the event, appointing two committees, one for the Raritan River section and the other for the Trenton district, to give attention to this matter and get in touch with these men at the different plants. The first committee will be composed of Mr. Staudt, F. A. Whitaker and Roy H. Minton, the two latter of the General Ceramics Co., at Keasbey and Metuchen, respectively. The Trenton committee will comprise E. C. Stover, Trenton Potteries Co.; Everett Townsend, Robertson Art Tile Co.; Herbert Sinclair and James Turner, all of Trenton, and Andrew Faltz of the Lambertville Pottery, Lambertville.

NEW CERAMIC SCHOOL AT RUTGERS

To advance the movement of a proposed new ceramic school at Rutgers College, mentioned in previous issues of *Brick and Clay Record*, an invitation was extended to State Senator Brown from this district to be present at this meeting of the Executive Committee.

The matter of the great need for the new building, one that would be a pride to the state, was ably presented to the senator by Mr. Cook, Mr. Bloomfield, Professor Brown, and others in attendance. Mr. Bloomfield said that the clay industry in certain phases was still in its infancy, as exemplified by the accomplishments during the war period; this work in the matter of optical glass, chemical stoneware and numerous other developments shows just what can be done, and done with American clays, it is but an impetus to bigger things as time will show. He pointed out the enormous extent of New Jersey's plastic clays and the growth of the industry in this section during the past ten years, saying that no stone should be left unturned to develop the natural resources of this great clayworking state. Reference was made to the accomplishments in Illinois and Ohio, and the fine schools established in these states for the young man with ambitions to become a ceramic engineer.

"New Jersey is entitled to a new school building," said Mr. Bloomfield, "and should have it; the Legislature must be shown the necessity for making a suitable appropriation for the structure and equipment."

Mr. Bloomfield's remarks were seconded by like sentiments from Mr. Cook, who explained the high position of the ceramic industry as compared with other lines of busi-

ness. He told Senator Brown that the capital invested in the ceramic field in this district aggregated \$40,000,000, while the annual production in all lines totals about \$20,000,000 in valuation. He spoke of the need for the proper training for the young man and the necessity for desirable quarters for this purpose, touching many salient points in his arguments.

Professor Brown drove home a number of impressive features of development in the ceramic field in the state, showing how the ceramic school at Rutgers College was assisting manufacturers in their different problems, and the desire to extend the instruction and experimental work to the greatest possible extent. It was brought out that the American Lead Pencil Co., with plant at Hoboken, N. J., was now using New Jersey clays where German clays were employed before the war; that special glassware for war service reached a high stage of development at a plant at Newark; that spark plugs for aeroplane service, probably the finest spark plugs ever made, were being produced at the Frenchtown works of the Star Porcelain Co., Trenton; while Mr. Whitaker, immediately following, said that construction work was now under way on a plant addition at the Keasbey Works of the General Ceramic Co., to be used for fused silica ware; there is only one other plant, and very small, of this kind in the country. In conclusion, Professor Brown suggested that when the new school became an established fact that it should be known as the New Jersey Ceramic Experiment Station, or equally suitable name.

In response to these comments, Senator Brown gave a short, inspiring talk. He assured those assembled that he was with them heart and soul in the proposition, and would be glad, under proper support, to introduce a bill for an appropriation at the next session of the legislature. He urged those present to compile the statistics and facts in concise form for presentation at the state house, so that members of the legislature could be fully "sold" on the merits of the case. He said that in his opinion no man in the state government had any idea of the wide extent of the ceramic industry and what was going on. These important facts and considerations, he remarked, should be brought out in a way to allow of no mistake, but as simple as A B C, and not technical, but plain talk. He urged that this data be prepared in printed form and that the association select a good speaker to present the different findings. In conclusion, he set forth that in his opinion this was an opportune time to inaugurate the movement—that it was a reconstruction period in many varied ways, and the doors were open to step right in and get busy.

As a result of this heart-to-heart talk with one in touch with state affairs, Mr. Cook recommended the appointment of a committee to work up the plans and data in connection with the presentation of the new school idea to the legislature. Following approval of those assembled, Mr. Cook, Mr. Bloomfield, Mr. Hansen and Professor Brown were appointed members of this committee, which will be extended to include others prominent in the association work. The initial meeting of this committee was called at Trenton, October 28, showing the intention for immediate and concerted action.

STATE EXHIBIT OF CERAMIC PRODUCTS

President Cook made mention of the proposed museum, or state exhibit of ceramic products, advanced at previous meetings of the association, and asked for the cooperation and support of those assembled and members to make this idea a bona fide fact—to bring about a real, worthy and commendable exhibit of appropriate selections of ceramic wares. Mr. Cook said that he wanted an exhibit that would be truly comprehensive and representative of the industry, that would

bring visitors for inspection, and would be well worthy of their attention.

In order that this plan might be developed in the right way, a committee was appointed to give careful thought to the matter, and to make a report as to suggestions for prompt and unified action at the general meeting in December. This committee will be composed of Roy H. Minton, Charles A. Bloomfield, F. A. Whitaker, August Staudt, George E. Hoffman, Leslie Brown (Lenox, Inc., Trenton), Everett Townsend, William Scammell (Maddock Pottery, Trenton), Miss Perry, and Mr. Cook, who will act as chairman.

OTHER BUSINESS

Before the conclusion of the meeting, the proposed visit of members of the English Ceramic Society to this country next summer was brought up by Mr. Stover, with recommendation for the appointment of a committee to invite the English delegation to the state and arrange for inspection trips to Trenton potteries and other interesting ceramic plants. Upon approval of this suggestion, Mr. Cook appointed Mr. Minton, Mr. Stover and Professor Brown to compose this committee.

The following members of the Executive Committee were in attendance: Charles Howell Cook, Abel Hansen, Professor George H. Brown, Roy H. Minton, F. A. Whitaker, Andrew Faltz, Charles A. Bloomfield, August Staudt, E. C. Stover. Others present were Howard Bloomfield; Charles T. H. Phillips, president, Sneyd Enameled Brick Co., Trenton; and LeRoy W. Allison, eastern editorial representative, *Brick and Clay Record*.



The Building Brick Association of America, Inc., New York City, a state incorporation, has filed notice of dissolution.



With the close of the active building season the United States faces a housing shortage equal to the needs of 4,000,000 people.

CONVENTIONS IN PROSPECT

December 2, 3 and 4—American Face Brick Association, French Lick Springs Hotel, French Lick, Ind.

December 2, 3 and 4—Face Brick Dealers' Association of America, French Lick Springs Hotel, French Lick, Ind.

January 27, 28 and 29—Canadian National Clay Products Association, King Edward Hotel, Toronto, Ont.

February 16, 17 and 18—Common Brick Manufacturers' Association of America, Deshler Hotel, Columbus, Ohio.

February 18, 19 and 20—National Brick Manufacturers' Association, Deshler Hotel, Columbus, Ohio.

February 23, 24, 25 and 26—American Ceramic Society, Hotel Walton, Philadelphia, Pa.

PAVING BRICK ASSOCIATION BUILDS ADVERTISING CAMPAIGN AROUND "TAXPAYERS' VALUE"

Increases Cooperation and Coordination

By Maurice B. Greenough

Secretary, National Paving Brick Manufacturers Association

THE NATIONAL Paving Brick Manufacturers Association believes that vitrified brick will have a wider and more stable market if the attention of the public is directed to the financial or economic aspects of street and highway paving. The Association consequently has adopted "TAXPAYERS' VALUE" as the keynote of its advertising campaign which began last July and that will be carried forward in increasing amount as time goes on.

Space is being used regularly in such magazines of national circulation as "Literary Digest," "Farm Journal," and "Colliers." In addition to these publications space is being carried in a selected list of the leading trade papers of national scope in the highway field. Among them at present are "Engineering News-Record," "American City," "Highway Engineer and Contractor," "Engineering and Contracting," "Municipal and County Engineering," "Good Roads" and "Manufacturers Record." Other publications will be added to the general and trade groups as means permit.

THE PAVING BRICK GUARANTEE

While the campaign is only in its fourth month and was inaugurated in modest proportions, the results already are being felt. The reasons for this are several.

Paving brick copy is striking a new note in highway advertising. This is possible on account of the superior quality of the product that has made and will make it most economical in use. It is this known high grade of material that permits the members of the national association to offer the public this guarantee of quality:

"The members of the National Paving Brick Manufacturers' Association guarantee their product against defects in material and manufacture. Each brick in street or highway surface gives assurance of long and worthy service because each brick is a guaranteed service unit, complete and finished before it is laid."

The significance of the guarantee is making a decided impression upon the public mind as evidenced by the returns to the national office.

Here is a typical paving brick advertisement addressed to engineers and officials; the above guarantee appears in every ad:

"PEOPLE ARE WAKING UP!"

"The simple proposition that the cost of a road is first cost, PLUS maintenance cost, PLUS THE COST TO THE USERS, when it is in bad condition or "closed for repairs," is beginning to "soak in" via the usual route—bitter experience.

"We have just compiled a list of 72 towns all over the country the largest of which has a population of 8,360 and

the smallest 305. These towns were selected for very (comparatively) large yardages of brick pavement per capita in contracts recently let. The total population of the 72 towns is 159,031; the total square yards of brick pavement is 2,339,921. The smallest town has 93,000 square yards. ARE PEOPLE WAKING UP?

"We are carrying the facts to the millions in a substantial advertising campaign, and thus, we trust, are helping to remove the obstacle of public ignorance from YOUR pathway."

A REORGANIZED NATIONAL ASSOCIATION

Before beginning its advertising activity the industry, of which more than ninety per cent. by output is represented by the National Association, was subjected to a thoro going survey at the hands of its advertising counsel, Crosby-Chicago. The purpose of the survey was definitely to establish the phases of Association work and of the industry that need strengthening by increased cooperation and co-ordination—all from the outside viewpoint of a group of men experienced in trade association affairs.

The survey established the general lines of effort that are being followed in advertising. It further supplied the incentive to a very considerable activity along many lines hitherto not participated in by the Association.

And before mentioning some of these efforts it may be well to describe the form of national organization as now constituted.

Membership in the National Association is held by six territorial or district associations of paving brick manufacturers; The Eastern, Southern, Ohio, Indiana, Illinois, and Western Paving Brick Manufacturers Associations. Each of these has an organized force of field men, usually engineers, at work extending the service of the industry to engineers, officials and the public generally. The field men supply the intimate, local contact of the industry with the ultimate purchaser of paving brick. Each district organization of manufacturers is autonomous, but the National Association is directed by a Board of Governors composed of members from each of the several districts and therefore speaks for the industry as a whole.

AN ACTIVE ASSOCIATION THRU ACTIVE COMMITTEES

The principal function of the National Association is to co-ordinate local effort into a harmonious national campaign for strengthening and widening paving brick markets. Therefore when the National Association advertises it does so equally for all its members. Plans are now being formulated however, whereby practically all advertising of any sort originating within the industry down to individual

companies, may be handled in conjunction with the national campaign.

While advertising is the larger activity of the National Association in point of expenditure, it is not the only one by any means. Thru active committees many questions of advantage to the industry are being studied and policies made effective. In fact, to the unsparing effort and cooperating of individual members of the Association, from the Board of Governors to the last committee named, in giving freely of their time and effort to the Association, can be attributed the record of accomplishment that is being made. It is rare indeed that a member of the Board or of a committee is absent from a meeting, or if he can not act personally does not send a representative with power to act in his stead.

WHAT THE ASSOCIATION IS DOING

The Advisory Committee composed of the executive heads of the territorial associations is one of the most active of all committees. To this committee is given authority to recommend any matters to the attention of the Board of Governors that it believes is for the benefit of the industry or the Association. This committee meets frequently, usually once in 8 weeks, and then in rotation from one district headquarters to another.

Special matters are referred to this committee from time to time for settlement. For example, the meeting in New York on October 20 was given over to a detailed consideration of brick pavement specifications that will be adopted for use in all territories of the National Association.

A special Committee on Cost Accounting is nearing the end of its work in the development of a system of uniform cost finding for members of the Association.

The Traffic Committee, jointly with a similar committee from the face brick and hollow tile associations, is at work with attorneys in the preparation of the complaint on brick freight rates to be heard before the Interstate Commerce Commission later in the year.

The Advertising Committee is guiding the general aspects of the advertising campaign in conjunction with advertising counsel.

The Trade-Mark Committee is formulating plans for safeguarding the value of the trade-mark now being used by the Association in its advertising.

Still another committee will undertake a study of trade acceptances to consider their possible usefulness to Association members.

Officers of the National Association are: President, W. W. Winslow, Indianapolis, Ind.; Chairman of the Board, A. W. Shulthis, Independence, Kan.; Vice-Presidents, W. P. Blair, Cleveland, Ohio, S. M. Duty, Cleveland, Ohio, W. M. Lasley, Chattanooga, Tenn.; Treasurer, C. C. Barr, Streator, Ill.; Secretary, M. B. Greenough, Cleveland.

The Board of Governors is composed of Messrs. A. W. Shulthis, Western Association; C. C. Barr, Illinois; C. C. Blair, Ohio; W. W. Winslow, Indiana; C. P. Mayer, Eastern; W. M. Lasley, Southern and W. P. Blair, S. M. Duty and M. G. Greenough ex-officio.

Alternates are Messrs. G. E. Mosher, E. E. Matteson, F. L. Manning, H. C. Adams, D. R. Potter and W. C. Brown.

The Advisory Committee has for its members Messrs. W. C. Perkins, Eastern Association; G. H. Reiter, Illinois; W. R. Schoonover, Indiana; J. R. Marker, Ohio; J. D. Harvey, Southern; G. W. Thurston, Western; W. P. Blair and M. B. Greenough, Secretary.

Others committees are as follows:

ADVERTISING: W. W. Winslow, Indianapolis; W. W. Cunningham, Pittsburgh, Pa.; H. C. Adams, Danville, Ill.;

H. C. Moatz, Cleveland, G. W. Thurston, Kansas City, Mo. MEMBERSHIP: S. M. Duty, Cleveland; Eben Rodgers, Alton, Ill.; F. L. Manning, Portsmouth.

TRAFFIC: J. G. Barbour, Canton, O.; R. T. Hutchins, Wheeling; W. P. Whitney, Springfield, Ill.; F. W. Lucke, Chicago; F. L. Manning, Portsmouth; W. L. Barr, Moberly, Mo.

TRADE-MARK: C. C. Blair, Canton; F. G. Matteson, Galesburg; S. M. Duty, Cleveland; G. W. Thurston, Kansas City; M. B. Greenough, Cleveland.

COST ACCOUNTING: S. M. Duty, Cleveland; W. H. Terwilliger, Galesburg; J. R. Thomas, Crawfordsville; H. B. Murray, Jr., Portsmouth, O.; W. C. Brown, Chattanooga; G. E. Mosher, Coffeyville, Kan.

TECHNICAL: W. P. Blair, Cleveland; W. C. Perkins, Philadelphia; Eben Rodgers, Alton, Ill.; W. R. Schoonover, Indianapolis; S. M. Duty, Cleveland; C. R. Mandigo, Kansas City.

TRADE ACCEPTANCES: Eben Rodgers, Alton; John C. Kline, Wichliffe, O.; R. I. Williams, Crawfordsville.



Trying to Improve Rail Traffic Conditions

Walker D. Hines, director general of railroads, authorized the following:

The railroads of the country are now doing a heavier business for the present season of the year than was ever done in the history of the railroads in normal years, and practically as heavy business as was done at this season in 1918, which exceeded all previous records. They have more cars in actual service, after excluding cars held out of service for repairs, than in 1917 or 1918. While the bad-order car situation was greatly embarrassed by the extensive strikes among shopmen in August, the percentage of bad-order cars is now rapidly improving.

There was an increase of 52,456 cars in serviceable condition between August 16 and October 4; 12,110 of this increase were added in the one week ending October 4.

NO COAL ZONES NOW

While the freight business is practically as heavy as at this time last year, the Railroad Administration in performing that business is unavoidably deprived of many exceedingly important aids which it was able to utilize last year. One of these is the zoning of coal, which last year compelled consumers to take their coal from nearby mines, and thereby greatly increased the efficiency of coal transportation. This advantage has necessarily been lost, because the coal zoning was terminated last winter. Another is that last year there was much heavier loading of many important commodities than it has been possible to secure this year, and the result is that under existing conditions more cars have to be used for the same amount of traffic than were used last year. There are various other important respects in which traffic was controlled in the interest of the war last year so as to get the maximum results out of rail transportation, and with the return of peace conditions and the resulting insistence of public sentiment upon release from war-time restrictions these advantages have been lost.

EXCESS OF BUSINESS OFFERED

The fact that there is still a shortage in rail transportation is due to the condition that the amount of business offering is far in excess of the transportation facilities of the country. This has always been true in this country in times of heavy business in the autumn month, except last

year, when the matter could be and was controlled with an iron hand with a view solely to war necessities.

At the same time railroad facilities have not expanded to the extent required in the public interest. Even prior to the war railroad facilities were not equal to the demands. During the war the addition of new facilities was greatly restricted by scarcity of material and labor. Since the war it has been impossible to enter upon or carry out any extensive program for enlargement of railroad capacity because of the uncertainty as to the status of the railroads. The Railroad Administration was not provided with the money and therefore could not originate or carry out any such program. The railroad companies in view of the uncertainty, were unwilling to provide the money. The result is that the railroad facilities of the country are decidedly below what the traffic demands. Nevertheless, the maximum traffic is being handled, and this is being done with less shortage of transportation than manifested itself at times in the prewar period.

COAL AND GRAIN TRANSPORTATION

Particular attention is being paid by the Railroad Administration to the furnishing of necessary equipment for the transportation of coal and of grain. It was decided early in September that in order to meet the coal requirements of the country it would be necessary for the railroads to move a minimum of 11,000,000 tons of bituminous coal a week. For the week ended September 13, 11,046,000 tons were transported. For the week ended September 20, 11,248,000 tons were transported and for the week ended September 27, the Railroad Administration estimates that approximately 11,575,000 tons were transported.

* * *

Important New Express Packing Rules Go Into Effect December 10

Preparations are being made to put the new express packing rules into effect on December 10, the date authorized by the United States Railroad Administration, which recently approved the new requirements. This is regarded by express traffic officials as one of the most effective steps taken to safeguard merchandise in transit by express since the unification of the various lines into the American Railway Express Co., which is agent of the Government in handling the express business of the entire country.

The new rules were put into effect to induce shippers to turn their business over to the carrier so that it can, with reasonable care on the part of the express company, be handled properly. The rules will not permit the use of paper wrapping for packages over 25 pounds, nor of ordinary paper boxes, wrapped or unwrapped, when the weight of the contents is over that limit. For shipments over 25 pounds, wooden containers, or fibreboard, pulpboard or corrugated strawboard containers of specified test strengths, are required.

This standardization of express rules will place the express service on the same basis as freight, so far as the character of the cartons used is concerned. In fact, the new express rules were modeled on those of the railroads and require the same kind of containers, except that in the express service a wider latitude is permitted in the size of the carton used. The new regulations are embodied in Supplement No. 5, to Express Classification No. 26, copies of which may be secured at any express office.

The regulations were authorized by the Railroad Administration to meet present day conditions, when the express traffic has reached abnormal proportions without

a substantial increase in the car facilities available for handling it. Express traffic supervisors are of the opinion that the stronger containers required will very perceptibly help to improve the express service and to protect the miscellaneous commodities shipped by express from damage or interference enroute. It is calculated that the time remaining before December 10 will be sufficient to enable express shippers to adjust themselves to the new packing requirements.

* * *

International Trade Conference

The foundation of an international organization of business men was laid in Atlantic City, at the meeting of the International Trade Conference which has just ended its sessions. Four commercial missions, one each from Great Britain, France, Italy and Belgium, joined with representatives of the Chamber of Commerce of the United States in planning the organization.

A name for the new international association will be chosen later, after a committee representing the several countries concerned has worked out details of organization.

The main and fundamental reason animating the Chamber of Commerce of the United States in bringing to the United States as its guests the foreign missions is the re-establishment of normal trade relations between this country and Europe. America's export trade has grown to such proportions that it has become necessary for this country to take up the question of extending further credits to Europe until such a time as Europe can be restored economically to a position in which it can begin sending goods in large quantities to the United States.

The foregoing delegates are starting from Atlantic City on a tour that will take them to large industrial cities. The towns to be visited are: Philadelphia, Washington, Pittsburgh, Cincinnati, St. Louis, Kansas City, Chicago, Detroit, Cleveland, Niagara Falls, Buffalo, Rochester, Boston and New York. Chairman Bedford said in his opening address before the assembled conference: "The supreme need of the world is that Europe and America shall be restored to the utmost productivity without a moment's delay, and that to accomplish that there must be co-operation between Europe and the United States." The conference has, as was hoped, proved a powerful instrument toward this end.

* * *

Revised Specifications Ready Soon

Revised edition of specifications for brick pavement construction, adopted at the meeting of the advisory board of the National Paving Brick Manufacturers' Association, in New York City, will be published and distributed at an early date, Will P. Blair, vice-president of the association, announces.

* * *

"Share in the Profits"

Seventy-five per cent. of the laborers in industry today have no understanding of overhead expenses; they appear to believe that all money received by a firm or corporation is profit. They talk much of "share in the profits" and ignore the fact that more than half, much more than half, the men who launch on business careers do not arrive at the place where there are profits to divide. Responsibility in control of industry means also responsibility in the losses in industry.

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products Such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

THE CERAMIC INDUSTRIES OF THE NETHERLANDS



THE CERAMIC INDUSTRIES of the Netherlands have been celebrated from the earliest times. In regard to raw material, no country is better fitted for the manufacture of earthenware. The valleys of the Rhine, Waal, Maas, Yssel, and their distributaries are lined with a stiff river clay, as "fat" as the potter can desire. The maritime provinces are covered with a layer of sea clay, deposited in ages past when the sea broke thru the line of protecting sand dunes and flooded the low-lying land. The native clays cover a wide range of colors and properties suitable for pottery, brick, or tile making.

For clays, earths, mineral colors, and glazes that are lacking in the geological make-up of the country the Netherlands, in ordinary times, has access to neighboring countries which can supply them. Imports of earths for porcelain, earthenware, and pottery making amounted to 306,754 metric tons in 1912 and to 303,780 metric tons in 1913. Later figures are not available.

Germany supplied 44 per cent. in the pre-war years 1912 and 1913; Great Britain, 29 per cent.; France, 14 per cent.; and Belgium, 8 per cent. Pure kaolin is one of the earths lacking in the Netherlands and has to be imported, and the making of fine porcelain and china is handicapped for that reason.

CERAMIC INDUSTRY WELL DISTRIBUTED

In the matter of location the ceramic industries are well scattered over the Netherlands. Not merely the historic centers of the industry, but the two score towns less known are contributing to the country's output of fine and coarse earthenware. There were 69 establishments listed in 1918 as manufacturing earthenware and tiles. Of these, nine were located at Gouda, six at Utrecht, three at Delft, three at Arnhem, three at Bergen op Zoom, three at Maastricht, three at Nijmegen, two at Deventer, two at Hazerswoude, two at Jutfaas, two at Leiderdorp, and two at Sneek.

The largest of these factories, situated at Maastricht, employed 2,000 workers. The combined number of employes in six other establishments was 755. Two of the principal factories, each employing 200 workers, used 90 horsepower each.

ORIGIN, DECLINE, AND REVIVAL OF DELFTWARE

The most celebrated product of the Dutch ceramic industry is the blue-and-white delftware. Its origin goes back to the beginning of the seventeenth century and resulted from an effort to imitate the Chinese blue-and-white jars and plates which were just being introduced from the Orient. The industry flourished in the seventeenth century and well into the eighteenth. It extended from its original home at Delft to Arnhem, Amsterdam, Haarlem, The Hague, Neuwer-Amstel, Oud-Loosdrecht, and Weesp. Delft alone boasted 30 earthenware factories in the palmy days of the industry. Vases, plates, tiles, and ornaments of all descriptions were produced in profusion and went to adorn the houses of the period. From the original blue-and-white the makers launched into a variety of colors and designs, finding their inspiration for the latter in the familiar scenes of Dutch daily life.

In the second half of the 18th century the market for delft declined, owing to the flooding of the European market with cheaper porcelains imported directly from the Orient, to the successful imitation of delftware by the French factories, and to the success of the English Wedgewood ware. The Dutch factories were gradually compelled to close down until, after 1850, only one of the establishments which had made the fame of delft survived. This factory, with the aid of the last of the tile painters who knew the old art, revived the industry in 1876. The success of their efforts to make blue-and-white delftware along the old designs has established the industry on a firm basis.

CHARACTERISTICS OF OLD DELFTWARE

The characteristic shapes and designs of delftware are well known even to the merest amateur collector of fine earthenware. The background is a glazed white, on which floral designs, birds, arabesques, and scenes of Dutch life are painted in a shade of blue known the world over by the name of delft blue. Less well known, but no less artistic, is the "colored" delft, in which reds and greens are blended in harmonious designs. The remarkable feature of the older delft is the skillful way in which the impurities of the native clays have been concealed by a well applied, white-lead glaze with a soft luster. The modern makers of delftware have at their disposal the finest kaolins that can be imported. Modern delftware is made up into plates, dishes, tea sets, table services, vases, art tiles, tile portraits, bric-a-brac, and a host of ornamental objects.

The study of the characteristic makers' marks and designs of the antique delft is a science in itself. "Genuine" delft of the present day is considered to be the output of a single factory at Delft, the only present survivor of the 30 factories that flourished in that city in the palmy days of the industry. This factory has the credit of reviving an industry that was threatened with extinction. "Imitation" delft is made in the familiar blue-and-white designs at Gouda.

The Dutch factories make, moreover, a considerable quantity and variety of the ordinary grades of chinaware for

Countries of destination	1912 Kilos	1913 Kilos	1914 Kilos	1915 Kilos	1916 Kilos	1917 Kilos	1918 Kilos
Austria Hungary						944	949
Belgium	285,147	210,643	110,000	30,000	20,000	252	1,775
Canada						28,414	
Cuba		878				63,495	
Dutch East Indies	20,072	53,665	23,000	40,000	35,000	49,115	
Egypt	890	1,555				26,183	10,885
France		5,055			5,000		
Germany	126,434	92,072	69,000	32,000	49,000	112,594	138,996
Norway	3,040						30,305
Russia	90,000						
Switzerland						23,587	26,584
United Kingdom	7,696	20,510	8,000	4,000	12,000		
United States	2,930	5,617				49,863	539,430
All other countries	13,134	8,484	280,000	227,000	185,000	64,588	55,930
Total	549,343	398,479	490,000	333,000	306,000	419,035	804,854

table services and other domestic use. Some of these follow the delft patterns; others imitate the Japanese and Chinese designs; while still others do not differ greatly from the styles sold in the United States.

DUTCH EXPORTS OF PORCELAIN

The exports of porcelain, other than tiles, from the Netherlands from 1912 to 1918, inclusive, were as shown in the accompanying table. (kilo=2.2 pounds.)

The value of the porcelain exported from the Netherlands (based on an official valuation of \$24.12 per 100 kilos) was in 1912, \$132,502; in 1913, \$96,113; in 1914, \$118,188; in 1915, \$80,319; and in 1916, \$73,807. The actual value of the porcelain exported was stated as \$61,287 in 1917, and \$142,078 in 1918.

IMPORTS OF PORCELAIN EXCEED EXPORTS

It is not remarkable, however, that the imports of porcelain into the Netherlands, so far as the figures show, should exceed the exports of that article. There are no known deposits of pure kaolin in the country; and this basic raw material must be imported. Moreover, with porcelains, as with all articles in which the factor of artistic value is involved, consumers' tastes will cause a good quantity of the foreign article to be imported, whatever the merits of the article of domestic production.

The Netherlands imported porcelain to the value of \$709,605 in 1912; \$806,708 in 1913; \$675,360 in 1914; \$803,196 in 1915; \$1,107,510 in 1916; \$896,395 in 1917; and \$792,684 in 1918. The actual amounts imported were 4,607,073 kilos in 1917, and 2,914,676 kilos in 1918. Germany supplied three-fourths of these imports in pre-war days.

MODERN ART POTTERY MADE IN VARIED STYLES

Gouda earthenware has won itself a reputation for its characteristic designs and colors. The principal material is a gray clay of domestic origin. Upon this are painted designs in brilliant reds, blues, yellows, greens, and whites, frequently of a floral motif. It is principally made up into vases, jardinières, platters, trays, humidors, ash trays, and ornamental plates. It is found in both the glazed and the unglazed finish.

A pottery similar in color effects to the Gouda, but more

conventional in design, is made at Nordwijk. Katwijk earthenware has a bright yellow ground. At Utrecht the St. Lucas faience has become celebrated for its brilliant metallic glaze, which causes it to gleam like porcelain in certain lights, and in others to glow like gold or bronze.

At Makkum, in Friesland, the celebrated old "Makkum blue" ware is being successfully imitated. De Lammer, in Friesland, has given its name to a type of uncolored, glazed pottery of mottled blue-and-yellow clay, with hand-carved, geometrical patterns.

A specialty of the potteries of Gounda is the manufacture of clay pipes. This industry dates back to 1637, and in its most prosperous days in the eighteenth century no less than 16,000 persons were employed in it. Today there are seven factories at Gouda producing these pipes, and one at Weert. The largest of these at Gouda employs 150 workers and uses 20 horsepower.

IMPORTS OF EARTHENWARE

Fine earthenware was imported to the value of \$431,154 in 1912; \$448,525 in 1913; \$249,642 in 1914; \$294,666 in 1915; \$409,638 in 1916; \$261,189 in 1917; and \$193,663 in 1918. Germany supplied from two-thirds to three-fourths of the total imports of fine earthenware, followed by Great Britain, which supplied about one-fifth. The amounts imported were 1,814,677 kilos in 1917, and 734,038 kilos in 1918.

Household pottery and sanitary earthenware of all descriptions are made in the Netherlands. In household articles there is strong competition from enameled iron and other metal articles, many of which are made in the country, as well as imported from Germany and Austria-Hungary.

EXPORTS OF DUTCH EARTHENWARE

Exports of fine earthenware, other than sanitary earthenware, from the Netherlands during the calendar years 1912 to 1918, inclusive, were as shown in the table herewith.

EXPORTS AND IMPORTS OF POTTERY

Exports of ordinary pottery from the Netherlands were 7,718,278 kilos in the calendar year 1912; and 12,038,040 kilos in 1913. No later figures are available. The value of these exports, officially assessed at \$8.04 per 100 kilos, amounted

Countries of destination	1912 Kilos	1913 Kilos	1914 Kilos	1915 Kilos	1916 Kilos	1917 Kilos	1918 Kilos
Argentina	375,988	450,576				285,043	183,220
Austria Hungary						247	440
Belgium	13,095,377	11,510,364	8,237,000	993,000	1,353,000	6,200	195,090
Brazil	176,183	62,496				225,548	124,290
British India						546,553	59,315
Denmark	1,258					186,720	205,510
Dutch East Indies	1,649,731	959,446	1,194,000	3,708,000	3,557,000	1,275,526	128,912
Dutch Guiana	41,125	35,853				34,501	1,720
France	1,260					253	
Germany	324,334	280,112	178,000	234,000	247,000	26,498	30,691
Norway	273	600				536,722	1,012,162
Switzerland						123,414	153,546
United Kingdom	46,631	82,107	87,000	473,000	148,000	33	2,452
United States	62,927	23,630				675,265	9,549
All other countries	278,901	208,725	443,000	2,687,000	3,903,000	474,303	244,197
Total	16,053,988	13,613,909	10,139,000	8,095,000	9,208,000	4,396,826	2,351,094

to \$620,549 in 1912, and to \$967,858 in 1913. The Dutch East Indian possessions, Germany, and Belgium were the principal purchasers.

Pottery was imported to the value of \$597,513 in the calendar year 1912; of \$692,612 in 1913; \$631,944 in 1914; \$497,676 in 1915; \$675,762 in 1916; \$367,823 in 1917; and \$502,002 in 1918. Germany, Belgium, and the Malay Peninsula were the chief sources of supply. The imports of pottery for 1917 amounted to 16,969,035 kilos; and for 1918 to 6,520,135 kilos.

TILE MAKING A DUTCH SPECIALTY

Tile making is a branch of the ceramic industry in which the Hollanders have been especially successful. Tile of all sorts are made, from roofing to flooring tile, including tile for purely decorative purposes. The latter are made in a wide range of colors and patterns, and are extensively used for decorating the outsides and insides of buildings. Entire fronts of buildings are decorated with pleasing patterns in tile work; for interior trim they are found not merely in vestibules and around hearths, but covering entire walls. The newer office and factory buildings are extensively finished with attractive designs in tile.

In picture tiles the Dutch are excelled by none. The favorite designs are portraits, Dutch scenes, or remarkable reproductions of celebrated paintings in sepia or delft blue. Some of these are of single, large tile; more often they are made up of individual tile of about 5 inches square, with the sections of the design so merged that the lines of division are scarcely noticeable. These are employed not only as house decorations built in the walls, but are frequently framed and hung up as pictures.

MAKING FLOOR AND ROOFING TILE

Tile of this description are generally produced in establishments making art pottery and porcelains. Roof and floor tile were made by 46 establishments in 1918, many of which are identical with the factories mentioned elsewhere as making earthenware and faience. Koudererk, in Zeeland, led in the number of tile-making establishments with 4; Maastricht followed with 3; Utrecht with 3; Woerden 3; Alphen aan den Rijn 3; Leiderdorp, South Holland, 2; Oudshoorn, South Holland, 2; and Zuilen in Utrecht with 2. Six of these establishments had a total of 495 employes and used, altogether, 327 horsepower.

Roofing tile of various materials are made in 67 factories. Six of these establishments are in the appropriately named town of Tegelen, in Limburg; 4 are in Swalmen, Limburg; 3 in Winterswijk, in Gelderland; 3 in Reuver, Limburg; 2 in Leeuwarden; 2 in Utrecht; 2 in Woensdrecht, North Brabant; 2 in Alphen, South Holland; 2 in Belfeld, Limburg; and 2 in Echt, Limburg. The largest establishment of those listed was in Deventer, employing 250 workers and using 200 horsepower. The total employed personnel of 9 other establishments was 352, and the combined horsepower of 7 of these was 182. Many of the roofing-tile factories are also brickmaking establishments.

The characteristic roofing material in use in the Netherlands is the flat tile of red clay, with one edge bent up and the other bent down, forming an S-shaped shingle, whose edges interlock to exclude the rain. Other similar tile are made of blue, or smoked, black clay. At Oegstgeest and Makkum the flat Frisian tile are made.

A "fat" river clay of domestic origin furnishes the raw material for these tile, which are subject nowadays to strong competition from similarly shaped tile of cement, asbestos cement, and bent glass.

BRICK MANUFACTURE A LEADING INDUSTRY

Stone is lacking in the geological formation of the Netherlands, except as the underlying basis upon which the layers

of surface soil rest. With the exception of a few outcroppings in southern Limburg, there is no natural rock in the Netherlands near enough to the surface to make quarrying practicable. Practically all the stone in the country, from the basalt revetments of the dikes to the sandstone or marble ornaments of the churches, has been imported. Accordingly, the Dutch builders have for ages had to rely on brick as the principal material for construction.

Brickmaking is one of the leading industries of the Netherlands. No less than 504 establishments were engaged in this manufacture in 1918. The location of the industry is well scattered over the 11 provinces. Of these 504 establishments, nine were at Arnhem; eight at Rijssen; seven at Utrecht; seven at Meerlo; six at Tilburg; six at Wageningen; six at Druten; five each at Gent, Herwen en Aerdt, Lonneker, Nijmegen, Oosterbeek, Ouderkerk aan den Yssel, Rheden, Velp, Westervoort, Winterswijk, and Woerden; and four each at Bolsward, Dieren, Jutfaas, Leeuwarden, Losser, Maurik, and Renkum.

Practically all of the Dutch brick factories employ machinery in their operations. The largest of the factories included in the 504 named above was at Millingen, employing 800 workers. One factory at Dieren employed 500; one at Tegelen employed 400; two at Nijmegen employed 300; one at Deventer employed 250; one at Bemmelen and one at Geldermalsen employed 200 each.

GREAT VARIETY OF BRICK MADE

For the output of these factories there is a strong demand at home, as well as abroad. The vast majority of houses, great and small, in the Netherlands are built of brick. Streets, sidewalks, railroad platforms, public squares and even country highways are paved with brick.

For decorative purposes brick are made in a variety of colors, with glazed or unglazed finish. These are extensively used on house fronts; there are few Dutch houses that do not have some ornamentation of this character. Baths and lavatories are frequently lined with glazed brick of varied colors.

Special brick, known as "klinkers," are made for paving roads and sidewalks. These are criss-crossed with diamond-shaped corrugations, which keep the feet of horses and pedestrians from slipping. Hollow brick for factory chimneys are made at one establishment at Tegelen, with 180 employes and consuming 300 horsepower; one at The Hague, employing 60 workers and using 80 horsepower; and one at Venlo. Lime-and-sand and cement brick, made in the Netherlands, compete with the clay brick in many of their uses.—*Trade Commissioner Arthur H. Redfield.*

Potteries Using Tunnel Kilns

Generalware pottery manufacturers thruout the country are now giving considerable attention to the development of the tunnel kiln. The first of these kilns, which was built at Sebring, Ohio, has been proved a success, and the second similar kiln is soon to be placed in operation at the plant of the Chelsea China Co., at new Cumberland, W. Va. It is generally admitted that the tunnel kiln is a success, and that thru its use plant production can be considerably increased. This is shown by the fact that the Pittsburgh-American China Co., will build five tunnel kilns at its new plant at Greensburg, Pa. It is possible that one or more tunnel kilns will be erected in the immediate Pittsburgh district within the next few years, altho some plants are so located that such an improvement is not possible. However, there are other plants in the territory which have

(Continued on Page 891)

The SUPERINTENDENT

Helpful Hints for Practical Men Whose Problem is Maximum Production With Minimum Cost

Spacing of Shaft Hangers

The old millwright who could "size-up" a length of shafting by giving it a squint with one eye half shut and immediately know how far apart to space the hangers no longer exists. Guesswork is being rapidly eliminated. Mathematics and science are generally relied upon these days.

So when the modern millwright wishes to hang some shafting, he first measures its diameter carefully, notes the number of pulleys to be carried and where they are to be placed, and then consults an engineering hand book for proper and up-to-date information.

To assist the millwright or anybody else who is about to hang shafting, I have prepared this chart which really

For example, how far apart should hangers be spaced on 2-inch shafting on which there will be no pulleys?

Find the 2 (column A) and glance across to column B and there's the answer—practically 15 feet.

Again, how far apart should the hangers be spaced where an average number of pulleys are to be used, properly placed close to the hangers?

Find the 2 in column C this time and glance across to column D. The answer is—about 9 feet.

Of course, where the shafting is to be heavily loaded with pulleys and belting, the distance should be even less than given in column D. There is the place where the modern millwright must use more mathematics or mighty good judgment.—*W. F. Schaphorst.*

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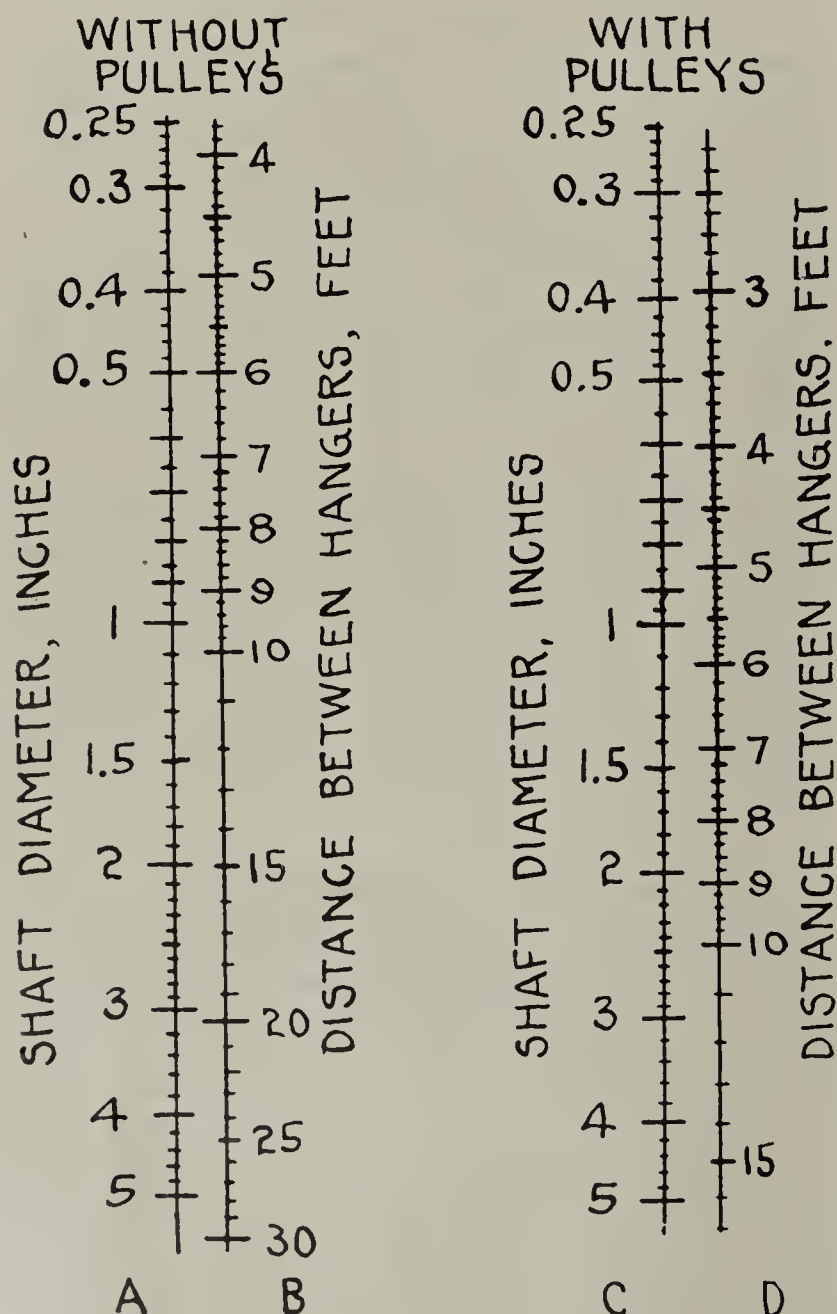


Chart Showing Shafting Without Pulleys and Shafting With Pulleys.

How Difficult Blasting Was Handled

The problem of blasting boulders near buildings sometimes confronts the clay manufacturer who usually is afraid to tackle this task. It is true that rocks do fly when blasted, but the secret of safety is to avoid excessive charges.

A large boulder which was imbedded in the ground about five feet and which was located about 1½ rods from a barn was broken in the following manner: It was ten by six feet in length and width and five feet thick. Narrow tunnels were dug with a spade, one to enable a charge to be placed directly under the center of the stone and two other tunnels were located about two feet from each end.

The charge used in the center consisted of twenty-five pounds of forty per cent. dynamite, the end charges being twelve and one-half pounds each—fifty pounds in all. Two electric blasting caps were placed in each charge.

The secret of success in either boulder or stump blasting is tight tamping and good resistance. After placing the charges in the holes, they were tamped very tightly with wet clay, special care being taken to leave no air spaces around the dynamite. Then as the ground was rather dry, water was poured around the stone, because wet ground offers better resistance than dry soil.

The three charges were connected up together by means of the blasting cap wires and the charge fired with a blasting machine. The shot broke up the stone so well that all but one piece could easily be handled. That was broken up by a mudcap charge. The stone was all used later in making concrete.

The cost was about \$13 for explosives and \$5 for labor. The work required about eight hours' time of one man.

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The Bureau of Labor Statistics states that food prices in Washington decreased two per cent. in September as compared with August. Expenditures for food in Washington increased 99 per cent. in the six-year period preceding September, 1919.

is two charts—one for shafting without pulleys (one the left) and the other for shafting with pulleys.

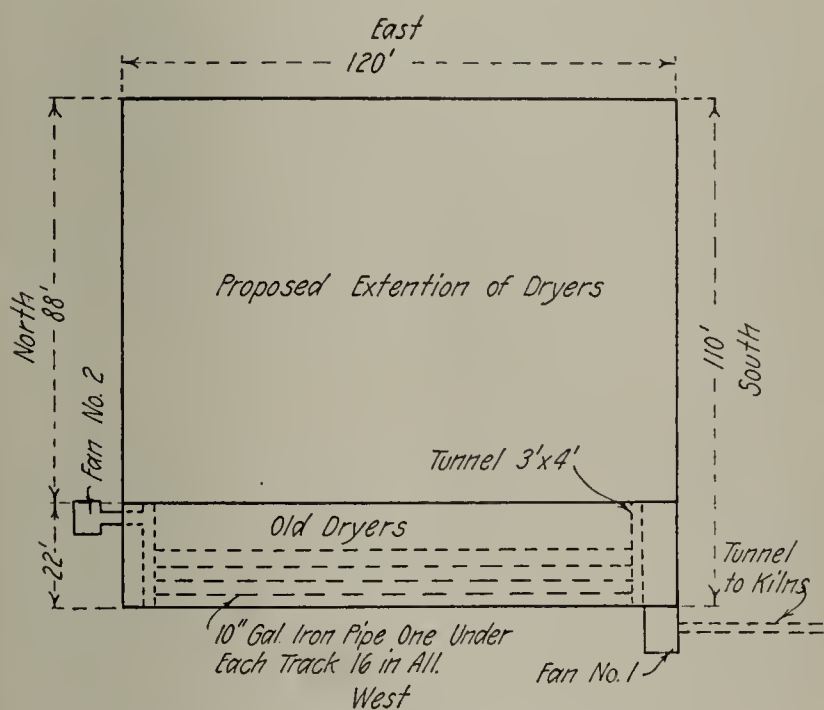
QUESTIONS *and* ANSWERS

The Best Authorities in Every Clayworking Branch are Called Into Consultation—Their Advice is Free to You, Thru These Columns

How Should Dryer Be Remodeled?

924. Minnesota—Enclosed herewith please find sketch of a proposed extension of our dryers showing the location of the fans. Fan No. 1 draws the heat from the kilns and discharges it into the dryer while fan No. 2 pulls it thru the smaller tunnels or pipes under each track and discharges the moist air.

Will it be possible to extend the dryer and still use the waste heat from our kilns with the present location of the fans and by installing dampers to control the distribution of the waste heat gases? If it is not possible to do this what would you suggest as the best method to secure adequate distribution of the waste heat gases in our dryer so as to dry the ware? We have plenty of waste heat to accomplish the drying.



Plan Showing Proposed Dryer Changes.

After completing the extension to your dryer you might try the use of dampers for regulating the equal distribution of hot air thru all the tunnels. It occurs to us that it will be a hard matter to attain this and we should not be at all surprised if it proved a failure. Hence, in making your extension allow for the removal of your fan No. 2 to the northeast corner of your dryer. If the fan were located in this position we are quite sure you would have the best arrangement for equal distribution of hot air thruout each tunnel of the dryer. However, even in this case it is quite probable that you will have to have some regulation with the aid of dampers. Hence, the installation of dampers in the first place would not be in vain.

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Limits Dense Smoke to Six Minutes Per Hour

On page 710 of the October 7, 1919, issue of *Brick and Clay Record* a question and answer, 919 Canada, in which

a correspondent asked for the following information, was published:

"The brick manufacturers of Toronto, Canada, would like to know if *Brick and Clay Record*" or any of its subscribers can give them any information in regard to the burning of brick in such a manner that the dense smoke which follows each firing can be cut down to a six-minute limit per hour.

"There is a by-law in our city which limits the dense smoke to six minutes per hour, and we are unable to comply with it. Undoubtedly there have been manufacturers in the United States who have been confronted with a similar problem and we would be glad to learn how it was handled. I might say that we have tried all grades of smokeless coal but find it unsuitable for burning brick. It has not a long enough flame to reach the bottom of our kilns. Our kilns are of the down-draft type, some round and others rectangular."

To this inquiry we made the following reply:

"Many manufacturers in the United States have been up against the same problem as yours and in most cases, we believe, they have been required to move to a point beyond the city limits.

"Possibly there have been a few concerns that have successfully combated the smoke evil, but we do not know who they are and hence cannot help you out in this connection. However, possibly some of our readers who see this item will be glad to send us some information on how they would solve the difficulty so that we might forward it to you.

"It occurs to us that it would be advisable for you to investigate the new furnace gas producer which has recently been placed upon the market. Some of the claims for this furnace are that it eliminates smoke and can be installed at a low cost.

"The Crescent Refractories Co. of Curwensville, Pa., have recently made an installation using this type of furnace and we would suggest that you write them obtaining information concerning their experience with this type of furnace."

Since publishing the above we have received the following information from a subscriber:

"I have been up against the same trouble and had to use hard coal. By having the right kind of a fire box, drop box, and feeding from the top and knowing how to fire with that kind of coal, you can reach the bottom of the kiln without much trouble. Of course, this method is a little more expensive, but 'Needs must, when the devil drives.'"

Another subscriber sent the following information:

"During the past two years I have been working with a fire brick plant to so design their fire boxes so as to eliminate smoke. This we have been able to do. These kilns are now fired off with about fifteen tons and less of coal for thirty-three thousand fire brick burned to Cone 16. If you will refer me to your inquirer or refer them to me, I shall be glad to advise them as to how they can recon-

struct their fire boxes so as to have no smoke at any time during the firing."

* * *

Hollow Tile Cracks in Drying

925. *Wyoming*—We are having considerable trouble in drying our hollow building tile, and thought possibly that you might be able to give us a little light on the subject, and at the same time help out the rest of the craft who may be struggling along under a similar load.

Our block (4x8x12) are made on a Fate. "Hummer Jr." combination brick and tile machine. The clay is fed into it from a bin by gravity after having been ground in a nine foot Eagle pan. The mixture which is quite sandy, flows very readily and smoothly over the Benson automatic cutting table after being pugged with hot water and to all outward appearances, forms a perfect block.

From the machine the blocks are conveyed with lift trucks to the dryer. The pallets which hold twenty-seven blocks when set single and fifty blocks when set double, are placed on shelves in the dryer. The shelves are the same height as the trucks and are arranged in tunnels. The heat is supplied from fire boxes at one end, connected by a cross flue at the other end which then lead to the stack. There are eight of these tunnels which are made independent by having brattice cloth hung between them. The ceiling is seven feet high and is also covered with the same cloth with openings in which to carry the heat out thru ceiling ventilators in the roof. The dryers usually have a temperature of one hundred degrees at both ends and about one hundred and ten degrees in the center of the tunnel length.

The atmosphere in the tunnels is of a sweaty condition for several days. Regardless of this humidity and the seemingly little draft in the dryer, the top edge of the blocks dry first and shrink so much that sometimes there is as much as one-half inch difference between the top and bottom. This is true whether the block are set one or two courses high. This is the condition that prevails about thirty hours after the tile are placed in the dryer. After they have been in the dryer about fifty hours the bottom of the block show about the same amount of shrinkage as the top, which gives the block a jog like appearance. After seventy hours the whole block seems to dry and then cracks begin to show up either full length near rib or else near the outer corner or perhaps across the middle in the opposite direction.

Now these conditions will exist all at the same time on the same pallet and right in the midst of all the mess of cracked ware, or, to one side or the other of the pallet, will be found some perfect block, but regardless of this fact there is a loss of fifty per cent. of the dryer full of ware.

We make four inch drain tile on the same machine and dry them the same way, but have no trouble in cracking and are able to get out ninety-eight per cent. good ware. We also make stiff-mud brick on this machine without experiencing any trouble. We have used both straight and tapered nozzle but find no difference in the amount of cracked ware.

In giving you the above information, we have tried to cover everything relative to the making and drying. However, if there is anything else you would care to know about the manufacture of the tile, we will be glad to furnish you with it.

The problem set forth above was sent to two experts in the clay industry, one of whom answered as follows:

"Altho your correspondent goes into a great deal of detail, he fails to say whether or not he uses a solid or slatted pallet. He also fails to say whether in placing the hollow tile on the pallets the tile are placed close together or tight.

In answering this letter I am presuming that the correspondent is using the slatted pallet, and is setting the tile close, without air space between.

"Unquestionably the entire trouble is due to his dryer or to the operation of the dryer. In the first place, in order to dry hollow tile safely it is necessary to have the ware practically tight against the ceiling or roof, as otherwise the flow of air over the top is bound to dry the tops first and produce just the condition which is encountered. It is noticed that no trouble is experienced with four inch drain tile. This I presume is due to the fact that the tile are round and cannot be set close together, thereby giving circulation around the inside and outside of the walls of the ware.

"The cracking of the hollow tile is due to drying strains caused by the blocks drying on the top and bottom first, and there never will be any success until it is possible to dry the whole block at about the same rate.

"I would suggest that the ware be set on pallets so as to leave one-half inch between each piece all around, and set them two high. In setting the top course the pieces should be staggered so as not to have one directly over the other. The cloth which forms the roofs should be lowered so that the clearance over the tile is not more than two or three inches.

"With these suggestions as a start it appears to me that there should be no difficulty in solving the problem. However, if difficulties still obtain, it would be well to begin to look for die or machine trouble. It is no use doing this while the conditions which are described concerning the dryer still exist. The circulation, (and they do have circulation, or the ware would not dry) temperature and method of setting on the pallets must be arranged so that the blocks will dry evenly from top to bottom. It is also my opinion that the ware should be dried in far less than seventy hours, and if the dryer is properly arranged they will do so."

The second expert submitted the following as a solution to the above difficulties:

"I have gone carefully over the attached letter from the concern having the difficulty with drying their hollow tile, and I am inclined to think that their difficulties are the usual combination that are found on hollow ware plants and are probably combinations of several factors rather than a glaring defect in any single operation, altho I am inclined to think that the drying is not as intelligently arranged as it should be.

"They say the material is quite sandy and flows very readily thru a die, makes perfect blocks and it would appear that as in the case of all sandy materials, they are encountering a sandy fineness of grain and also a certain lack of plasticity, both of which factors would tend toward bridge cracking. That is, the material would not unite perfectly after passing over the bridge at the back of the die, unless the die were properly constructed to overcome this difficulty. It is customary practice to set the bridges up very high when one is using a non-plastic clay, and also to use a long boss on the face of the die to assist in the after forming of the bar and heal up the cracks that are formed in passing over the bridge.

"I do not see any reasons for having the drying tunnels the same temperature at both ends and hotter in the middle.

"In one of the paragraphs of the correspondent's letters, he stated that there is seemingly no draft in the dryer and that the humidity is entirely generated by the application of heat. This is fundamentally a violation of the first principle

(Continued on Page 888)

IN *the* WAKE *of the* NEWS

Being a Brief Mention of a Host of Interesting Happenings in the Varied Fields of the Clayworking Industry

Carl Walters Back On the Job in Ohio

Carl C. Walters, who for the past two years has been in California because of his wife's ill health, has now returned to Ohio, where he is connected with the Moores-Coney Co., of Cincinnati, in charge of the brick department and looking after the interests of the Harris Brick Co., a subsidiary concern.

Before leaving for California Mr. Walters was salesman-manager of the Hocking Valley Products Co., of Columbus, and while in Los Angeles was associated with the Los Angeles Pressed Brick Co. as assistant to the president.

Cleveland Men Get Ready for French Lick

R. L. Queisser, R. L. Queisser, Jr., and E. G. Oviatt, of the Queisser interests, plan to head a delegation of Cleveland dealers to the meetings of the American Face Brick Association and the Face Brick Dealers' Association of America, at French Lick, Ind., December 2, 3 and 4. According to Mr. Queisser dealers believe there is a lack of cooperation on the part of producing interests resulting in delayed orders, refusal of orders, and uncertain price conditions. The hope of the Cleveland interests in attending the meeting will be to obtain a basis of uniform adjustment on these and other features of handling the material.

Address Graduating Class on Brick Roads

Lectures on brick road construction were delivered by Will P. Blair, vice-president the National Paving Brick Manufacturers' Association, Cleveland, and W. C. Perkins, the Eastern Paving Brick Manufacturers' Association, Conneaut, before the West Point (N. Y.) graduating class of June, 1919, October 15. This class on its return from France has been taking the post-graduate instruction at Camp Humphries, Va., where road construction is one of the special courses.

MacDonald Back on the Job

A. P. MacDonald, sales manager for the P. Bannon Pipe Co., Louisville, Ky., is back on the job again after having been laid up for ten days with an attack of bronchitis. Mr. MacDonald reports that he is still feeling a bit shaky, but is back to stay. Business with the company is good, all departments running full. Heavy deliveries are being made on the Atherton Building Annex, and out in the state.



Irvin Felsum, salesman, and Ferris B. Martin, Minneapolis representative of the Twin City Brick Co., of Minneapolis, Minn., were in Columbus late in October calling on manufacturers and jobbers. They report a good demand for brick and in fact all building supplies in that territory.



Willis Fisher, an officer of the Sayre & Fisher Brick Co., Sayreville, N. J., and brother of Edwin Fisher, presi-

dent of the company, died at his home in that city on October 14 after an illness of several months.



D. H. Applegate, formerly superintendent of the Crescent Brick Co., Red Bank, N. J., has now accepted a position with the Philadelphia Textile Machinery Co.



L. G. Nelson, secretary of the R. L. Queisser Co., Cleveland, Ohio, is taking a vacation in a trip thru Indiana and Illinois.

Alabama Clay Plants Fear Tie-Up

The threatened coal miners' strike and the car situation are causing brick and tile concerns in the Birmingham district some little worry. Several clay products manufacturers have expressed the opinion that if the strike goes into effect as scheduled the clay products business in this district will be tied up more from lack of transportation facilities than from lack of coal to continue their own operations.

Local brick plants are said to be fairly well supplied with coal. The railroad, however, it is stated, has no large reserve supply of coal and local manufacturers are of the opinion that traffic will be curtailed and only perishable freight and absolute necessities carried.

It is stated that a number of local concerns are accepting all orders subject to the coal and car situation and other causes beyond the control of the manufacturers.

Daphne Plant Moved to Rendell

The W. B. Paterson Clay Co., formerly the Daphne Pottery Co., of Daphne, Ala., is building a brick plant at a point sixteen miles north of Mobile, Ala., a place which they have named Rendell. They expect to make fire brick in the course of time and during the coming spring will probably manufacture a certain line of pottery. The pottery plant at Daphne has been dismantled and all machinery moved to Rendell, Ala. A No. 3 Steele brick machine with side cutter has been installed and the first run of brick is to be made the first week of November.

Birmingham Brick Co. Incorporated

Papers of incorporation have been filed in the probate court by the Birmingham Brick Co. The concern has a capital stock of \$2,000. Its headquarters are located in Birmingham, Ala. The officers of the company are: C. S. Lawson, president and treasurer; H. S. Teal, vice-president, and N. A. Graham, Jr., secretary. The company is operating a brick yard near Birmingham.

Tropico Plant Involved in Big Deal

A large industrial deal was recently announced in Los Angeles, when the Pacific Minerals Chemical Co., incorporated for one million dollars, took over the Tropico plant

of the Pacific Tile & Terra Cotta Co., which is owned by Lycurgus Lindsay. About \$700,000 is already invested in the plant and machinery and it is understood that the new company is contemplating the investment of \$500,000 additional in building up and extending the activities of the industry. The property of the company includes about 37 acres along the Southern Pacific tracks at Tropic; the plant occupying about 15 acres at the present time. The products manufactured include sewer pipe, various kinds of brick, building block and terra cotta. A leading feature is the mining and grinding of talcum from the company's deposits in Death Valley. Infusorial earth is also handled in large quantities from the deposits in Esmeralda County, Nev. It is estimated that the present value of products produced each month is \$20,000 for sewer pipe, \$10,000 for other clay products, \$25,000 for terra cotta and \$15,000 for talc. Under the plans to be followed under the new organization, the output will be doubled and it is expected that about 1,000 men will be employed in the works. The market will be extended to South America and the Orient. Offices will be established in New York and Chicago by Peters, Klotz & Long, a financial house of St. Louis, Mo. E. M. Davids, who has been the manager of the Tropic works will continue in that capacity with the new firm.

Pottery Plant at North Sacramento to Resume Clay Products Manufacture

The pottery in North Sacramento, Cal., formerly operated by the Cannon-Phillips Co., is soon to resume the manufacture of clay products, according to a recent announcement made by D. A. Cannon, who is now in possession of the entire stock of the Cannon-Phillips Co. and will in the future operate the business under the name of the Cannon Co. When the fires are again started in the kilns of the pottery, a patented clay building block, hollow tile and pressed brick will be manufactured. A number of the former employees of the old company will return to the pottery upon its opening. V. J. Persons, former secretary of the Cannon-Phillips Co. will remain with the newly organized firm as outside representative. T. G. Mapel, formerly connected with the Diamond Brick Co. at Pittsburg, Cal. has been engaged as superintendent and will bring with him a number of employees who will establish permanent homes in North Sacramento. The company already has received an order for 100,000 tons of tile to be used in the construction of a new plant of the Carnation Products Co. at Guestine, which is to cost about \$250,000.

Shows Fine Display of Enamel Ware

The Pacific Sanitary Co., of San Francisco, operating factories in Richmond and San Pablo, was among the exhibitors at the recent California Land and Industries Show which was held at the Civic Auditorium. The display of the company's enamel ware was most artistically arranged and was the subject of much favorable comment among the many spectators who visited the booth during the two weeks of the show. A model bathroom fitted entirely with the enamel ware products of the company won blue ribbons for both artistic arrangement and quality of fixtures.

Production of Red Shale Being Developed

Livermore, Cal., is the scene of a comparatively new mining industry which is being developed in the production of red shale, used in making roofing and coloring tile. Walter McBean, of the Crown Ore Mills of San Francisco, has

been working on deposits of the shale in the vicinity of Livermore for the past two months and made the first shipment of ore about the middle of October.

San Francisco Building Conditions Healthy

Activities in the clay products industry in San Francisco, Cal., and other parts of the state are in extremely good condition, according to general reports in local offices; while the building permits of September did not equal those of August, there is still a healthy amount of building under way in and about this city.

Busy Winter for Delaware Plants

Building work is coming around to a good point at Wilmington, Del. The lethargy apparent in this section during the spring and summer has certainly given way to "big doings" this fall, and projects now nearing maturity indicate that the winter season will round out a busy year. Housing work is receiving considerable attention and with a settlement of labor difficulties it is expected that energetic activity will ensue in this direction as the weeks go by. A movement is under way in this line by committees of the local Consumers' League and the Y. W. C. A., and it bears evidence of bringing material good. Among the interesting enterprises to develop during the past fortnight is the erection of a new bank for the Wilmington Savings Fund Society on its present site at Ninth and Market Streets, a new brick school for the Board of Education for extensions to the present Public School, No. 25, estimated to cost about \$300,000; and a new building for the Diamond Ice & Coal Co., Market Street, to cost about \$50,000.

Prices Remain Firm in Wilmington District

The demand for building materials is maintained at a good point in the Wilmington, Del., district. Common brick leads in the matter of call, with price holding firm at a level of around \$20 a thousand, delivered on the job; the brick plants in this vicinity have not had much opportunity to stock up, owing to activity of call and labor conditions, and an advance in present quotations before the winter is past would not be entirely unexpected. Good inquiries are being received for hollow tile, partition tile, drain tile and sewer pipe, as well as other burned clay products, and there is no indication of any recession in present prices. Hollow building tile, 4x5x12 in. is selling for about \$50, delivered on the job, while larger sizes are from \$80 upwards; partition tile, 3x12x12 and 4x12x12-in. is quoted at \$100 and \$120, respectively. Good grade fire brick is selling for around \$65 a thousand, delivered. The shortage of freight cars in the Pennsylvania hollow tile district has resulted in diminished deliveries in this vicinity.

New Ceramic Plants in Delaware

The Superior Tile Co., Dover, Del., has been incorporated with a capital of \$250,000 to manufacture tile and other ceramic products. Frank Jackson, W. I. N. Lofland and Mark W. Cole, all of Dover, are the local incorporators.

The Clay Products Co. of America, Wilmington, Del., has been incorporated with a capital of \$5,000,000 to manufacture ceramic specialties, mine clay and kaolin, etc. M. C. Kelly, J. D. Frock and S. L. Mackey, Wilmington, are the local incorporators.

Oberly Plant Keeps Up Production Rate

The Oberly Brick Co., Wilmington, Del., has been keeping up a good rate of production at its plant. The output is averaging well over 20,000 brick a day, and there is a heavy call for material outside of the city limits. The company views the outlook with favor, and believes that building operations will come to a fine point of activity during the next few months.

Purinton Company Entertains Rotary Club

About fifty members of the Galesburg Rotary Club were the guests of the Purinton Paving Brick Co., on October 16, and inspected the yards and plant at Galesburg. The guests were served a buffet luncheon in the offices of the company prior to going thru the plant with President F. G. Matteson and his ceramic engineers, who explained the various operations in detail to the club members, who were very much interested in the plant.

Terra Cotta Firm Opens New Offices

The American Terra Cotta & Ceramic Co., Chicago, Ill., has opened up offices at the old Stanley Field Mansion, where they have ample room to show samples and wares and give proper attention to the problems of their customers and friends.

New Incorporation at Evansville, Ind.

Articles of incorporation have been filed by the Best Brick Co., at Evansville, Ind. The company will have a capital stock of \$50,000. The incorporators are: Walter F. Wood, Clarence E. Schutz, Theodore Gerke, George W. Heiman, Andrew G. Stevens, William L. Tucker and Louis Ernst.

Eastern Kentucky Coal Out of the Market

The threatened coal strike is worrying a number of brick manufacturers as well as manufacturers of general building supplies in and around Louisville, Ky. One big company reports that it has a two months' supply of coal at its plant, but very few are that fortunate, as most of them didn't figure that there could possibly be a strike, or that the car shortage would even become serious. Today the shortage of coal cars is holding operations down to about sixty per cent. in Kentucky, and of that amount about forty per cent. is being sold on contracts, leaving twenty per cent. of the production for the open market sales. Since the strike became dangerous looking, buying has been strong, with the result that almost all mines are out of the market and prices can not be had. A few jobbers are quoting Eastern Kentucky mine run at \$3.50 and \$3.75 a ton at mine, and Western Kentucky mine run at \$2.75 and \$3, but are unable to make many deliveries at those figures. Local brick men report that it is practically impossible now to secure Eastern Kentucky grades, and that conditions are going to be bad in event of the strike.

Louisville Plants Report Busy Season

The Coral Ridge Clay Products Co., Louisville, Ky., reports that it is running full time, and that there has been an improvement in the box car supply, resulting in the company getting about seventy-five to ninety per cent. of car requirements. However, it has been a little short of labor, due to labor floating from job to job.

Andrew Hillenbrand, of the Progress Pressed Brick Co., is one of the most optimistic men in Louisville. Mr. Hillenbrand said: "I can see a big brick market for several years

to come, and believe we will do eight to ten million a year as soon as conditions settle. We have just purchased thirteen acres of additional clay, and figure that we have clay to run the plant fifty years. Today we are operating full time, and delivering from 25,000 to 35,000 brick a day. Business is good."

A. E. Livingston, of the Louisville (Ky.), Builders' Supply Co., reports a very active demand, and excellent business as a whole. Shortage of brick supplies and inability of manufacturers to make deliveries is holding back that department.

W. L. Cremers, of the R. B. Tyler Co., Louisville, reports a big gain in September and October over earlier months in the year, and over the same months of last year. However, many manufacturers are oversold and deliveries are coming thru slowly. Mr. Cremers is a real optimist, and believes that 1920 will be almost a banner year.

Plans Million Dollar Fund for Housing

A committee of three, composed of builders and real estate men, recently returned from St. Louis, after investigating the St. Louis Chamber of Commerce \$2,000,000 home building campaign. This committee represented the Louisville Board of Trade, and reported very favorably on the plan. Louisville plans to raise a million dollar fund, probably by local subscription, for the purpose of building homes in Louisville to supply the bad shortage or housing facilities. The Board of Trade is expected to take definite action on the matter within a few days.

Stoddard To Address Kentucky Association

The annual meeting of the Kentucky Clay Products Association will be held sometime shortly after the first of the year, in all probability in Louisville, but the time or place has not been definitely set as yet. James Howington, of the Coral Ridge Clay Products Co., who is an officer of the association, reports that Ralph Stoddard, secretary-manager of the Common Brick Manufacturers' Association, expects to attend the meeting and give the members a general talk, as well as arrange to affiliate the state members with the national.

Westbrook Concern Lands Nice Contract

The City of Westbrook, Me., will undoubtedly establish a record for itself with the construction of the state-aid highway on Main Street, for not only will the work be done by the city, but the vitrified brick from which the roadway will be constructed also will be a Westbrook product, manufactured by the Westbrook Clay Products Co., formerly the Hawkes Brick Works. Their product is pronounced by the State Highway Department one of the best types of highway brick yet tested by the department.

Mayor William B. Bragdon hopes to make the stretch of roadway, which will extend 600 feet, one of the best pieces of highway in Westbrook. It is expected that the work will begin within a short time and will be completed before the beginning of real cold weather.

From the cement foundation to the top of the brick the roadway will extend to a depth of eight inches, a depth that will assure an unbreakable surface, and gives promise of being an experiment that will establish firmly this type of road work in Westbrook.

After a thoro demonstration, the State Highway Commission accepted the brick and pronounced it eminently satisfactory in every way. The company is now engaged in making special molds in which the road brick will be made and will be in a position to deliver the brick as it is required.

FIRE BRICK

DOVER FIRE BRICK CO.

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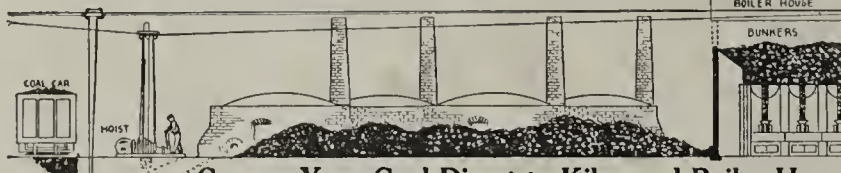
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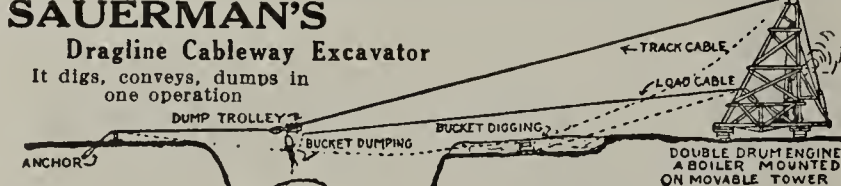
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NEW YORK. CHICAGO. DENVER. SAN FRANCISCO.

Maine Busy On Sewer Work

The city of Westbrook, Me., is to build 400 feet of 15-inch sewer and 300 feet of eight-inch sewer shortly.

Proposals for building 1,125 feet of eight and ten-inch sewer have recently been received in Portland, Me., and the contract awarded to a local concern.

Baltimore Pushing Ahead in Building Work

Baltimore, Md., continues to "hit hard" in the matter of building construction. There has been no material let-up since the real building movement started in this district, and work of all kinds is going forward at a rapid clip. In the industrial district the projects now under way have gone far to swell the building totals, and at Sparrows Point, Fairfield, Curtis Bay, and other localities, there is a large volume of good sized work. Thruout the city the housing developments are assuming an interesting status, and brick homes of all varieties and kinds are being erected and pushed to completion for early occupancy. Among the interesting projects now developing are an eight-story brick and stone apartment house to be erected at the corner of Thirty-fourth and St. Paul Streets at a cost of about \$1,000,000; bids are now being taken by E. L. Palmer, architect, 513 North Charles Street. The Century Theater Co., Garden Theater Park Avenue and Lexington Streets, will soon call for bids for the erection of two new theaters in the vicinity of Clay and West Lexington Streets, to cost about \$500,000. The Board of Education has selected Edward H. Glidden to prepare plans for the erection of a new one-story school on Popular Grove Street, Calverton; the structure will occupy an entire city block.

Strong Demand for Materials at Baltimore

With the extensive activity in building operations at Baltimore, Md., and vicinity, it is little wonder that the mason material dealers and brick manufacturers are busy. There is a strong demand for materials of all kinds, and common brick, as to be expected, is well in the lead. The big demand for this material is not helping an accumulation of stocks, and before the winter is over, there is likely to be a shortage of desirable material. Prices hold firm at the new levels as recently reached, or from \$19 to \$20 a thousand; if the demand maintains, a dollar or two advance will likely be made before the turn of the year. The local brick plants are busy, and large quantities of brick are moving to outlying districts. Hollow building tile is in popular demand, and large quantities of this material are being used for garage construction; used in connection with brick, this is an ideal fireproof material for structures of this nature. Other burned clay products, such as partition tile, drain tile, etc., are moving in encouraging fashion, with no change in price. Face brick is in active call, with desirable selections selling from \$40 to \$50 a thousand, delivered. Good grade fire brick is quoted at from \$70 to \$75 by the local dealers.

In connection with the strong call for common brick at Baltimore, Md., it is said by a prominent builder that things have come around to a point where the man with the ready cash is the man who gets the brick when he wants it, and that the matter of credit is being pretty well eliminated in the Baltimore brick market. It is frankly admitted that there will be considerable shortage if existing conditions continue.

New Homes Corporation at Hagerstown

The Hagerstown Homes Corporation, Hagerstown, Md., has been organized by local interests to build a large number of homes in this section to relieve the present house shortage. It is planned to inaugurate work on the erection of the first unit of several hundred homes at an early date. Lewis T. Byron, E. N. Funkhouser, John J. Porter and R. H. McCauley, all connected with local industrial establishments, are directors of the organization.



The plant of the Queen City Brick Co., Cumberland, Md., recently acquired by new interests, will be operated under the name of the Cumberland Brick Co. The new organization has inaugurated production, and will manufacture a good grade common brick. Different improvements will be made at the yard for increased facilities.

Top Price Not Yet Reached in Boston Brick

A growing tendency toward the increased use of brick for building purposes, both for dwelling houses and business structures, is noted by brick dealers and building contractors in Boston and vicinity. In one city three, four-apartment houses about to be started will be of brick and similar reports are received from other sections. Brick manufacturers and dealers naturally are feeling the effect and most of them are fairly well satisfied with business conditions. The average quotation for up and down brick, delivered on the job, is \$20 per thousand, but some dealers are asking more and there is a feeling in some quarters that the top price has not yet been reached.

Producing Brick in Boston Is No Easy Job

The "Commercial Bulletin" of Boston, which keeps its finger constantly on business pulse in Massachusetts, summarizes the brick situation in Massachusetts at the present time as follows. "Selling brick is not just now a matter of great difficulty. Producing them, however, calls for much skill in the handling of men and a good deal of money. In other words, keeping the help content requires both patience and capital."

Plan to Repave with Brick


Plans to reconstruct a number of soft paved streets in the west end of St. Louis, Mo., with brick in order to withstand heavy commercial traffic, have been announced by the Director of Streets. Chief Engineer Horner has been instructed to draw up specifications outlining the cost of the work and to designate the taxing district affected by the improvement. Director Talbert said that trucks using the thorofares have proved too heavy for the paving materials used in the construction of the streets.



The Dexter Brick & Tile Co. has been incorporated at Dexter, Mo., with a capital of \$12,000, by A. H. Carter, Lee Williams, Sam Ulen and William Crumlic.

Brick Contracts Under Way in Nevada

Brick and terra cotta is to be used in the following building contracts in the state of Nevada: A four-story auto salesroom in Reno, Nev. at a cost of \$60,000; a one-story



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"For Continuous Production"
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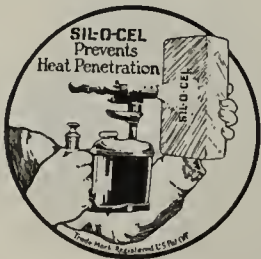
For indicating and recording are made for almost every known application. For Brick Kiln Temperatures ranging from 1500° to 3000° F. we recommend the High Resistance Type Instrument with rare metal thermocouple of platinum-rhodium and special protection well. This makes an especially sensitive and yet sufficiently rugged instrument for every day use.

Write for Bulletin AE-275.

THE BRISTOL COMPANY, Waterbury, Conn.



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They Drill Big Blast Holes

at the plant of the Kansas Buff Brick & Manufacturing Co., Buffville, Kansas.

They say:

"It has cut the labor and fuel bill about 60%, and the powder bill about 50%. It paid for itself in the first three months; it saves enough powder each year to more than pay for its initial cost."

This is interesting because it is a fact.

Write for literature on Big Blast Hole Drilling

The Sanderson Cyclone Drill Co.
Orrville, Ohio

and basement school building to be erected at Lovelock at an estimated cost of \$60,000 and a two-story and basement residence to be erected in Reno, which will cost about \$20,000.

New Jersey Going Strong on Building Work

It is rather hard these days to keep an accurate tab on building developments in New Jersey. The entire state is enjoying a literal "boom" in construction operations, and now that the winter is approaching, projects are multiplying rather than diminishing. The labor situation is clearing and all recent strikes of any account have been settled; this is true not only in northern New Jersey, but at Trenton and other districts which have undergone a handicap and retarding of operations thru this cause. The call for building materials of all kinds and in all parts of the state is strong, even those who always look for the best in trade frankly acknowledge that "things are getting close to normal" in this direction; brick, tile and other burned clay products stand well in the lead, and the question is rather becoming one of keeping sufficient stock on hand instead of worrying to keep stock moving. Housing work is the big feature of operation—at Newark and vicinity, Paterson and Passaic, Morristown, Trenton, Camden, the Raritan River section and thruout South Jersey, work of this character has taken on a remarkable aspect; homes of all kinds are being erected and at top speed to permit earliest possible occupancy. Industrial work, too, is certainly not lagging and there are a number of important such projects now under way in the different industrial centers; enterprises of this type require large amounts of building materials and every effort is being made to "keep the job supplied." Other states a little slow in taking on building work might well take pattern after New Jersey—she is going, and going strong.

Call for N. J. Products Reaches Top Notch

There is little complaint to offer in regard to the present demand for brick and other burned clay products in all parts of New Jersey. In certain sections the call has reached a "top notch" point, and from present indications is likely to stay there for some time to come. In regard to current building operations, permanency of structure has taken on a strong turn, and for this brick is a popular material. Common brick is firm at present price levels and the tendency seems for higher quotations; this has occurred at Paterson and Trenton, where \$20 and \$19 per thousand, respectively, are the prevailing figures, delivered on the job. At Newark, \$20 and \$21 is being asked, while at Morristown, \$22 is the average; South Jersey is selling the material around this latter figure. Terra cotta blocks are rapidly growing in popular demand and are being stocked by different prominent dealers as sort of a basic commodity; there has been quite a little difficulty in securing this specialty under good shipment schedules, and sometimes it is a question of waiting for weeks. Hollow tile is also backward in shipments from the Pennsylvania districts, due, it is said, to a general shortage of cars. Fire brick of good quality is selling from \$65 to \$70 per thousand in different parts of the state, delivered on the job. The call for face brick is growing keener, and the inclination seems to be to higher levels for best selections; the present quotations range from \$35 to \$40 and upwards. Enamel brick, American size, is selling for \$100 per thousand, delivered on the job.

BRODERICK & BASCOM ROPE CO.
SAINT LOUIS, MO.

Manufacturers of

B. & B. WIRE ROPE

AND

Aerial Tramways
For Economical Haulage



A28

Sneyd Plant Maintains Active Production

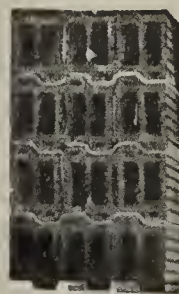
The Sneyd Enameled Brick Co., Trenton, N. J., is maintaining active production at its plant for the manufacture of fire brick and kindred specialties. The company makes a very high product in this line and furnishes the majority of the local potteries with their fire brick requirements. The present quotation on the material is \$65 per thousand for best grades. The plant is equipped for the manufacture of all special standard shapes of fire brick, including key, wedge, flat back, arch, arch bung, arch angle bung, etc., as well as cupola blocks, rotary kiln blocks and the like. The enameled brick production of the company is par-excellence and represents the best in this line; the material is absolutely impervious and will stand the red ink and other severe tests. This material is turned out in a variety of colors, including white, blue, green, gray, brown and other shades. American size only is manufactured and the present price is \$100 per thousand. The yard has seven rotary kilns, and in the matter of fire brick production, which has grown to be a large feature of manufacture, is producing about 50,000 brick per week. From clay to finished product the plant is being brought up to the highest point of efficiency; the property is old and quite a few improvements have been necessary to bring facilities up to the point as desired by Charles T. H. Phillips, president of the organization. Mr. Phillips sticks right to the job and gives personal attention to all features of production.

Production Slackens at Trenton Plants

The near approach of the winter season has slackened production at the Trenton, N. J., brick plants drying outdoors. Arrangements have been made for early closing at some yards and stocks are being accumulated to the greatest extent for the next few months to come. Production on a whole has been fairly satisfactory, with labor the same troublesome factor as in other parts of the country; it has been very hard to get good men, and the piece-work system has been the most popular and successful. Local prices are on the upward trend, good common brick is now selling for \$18 and \$19 at the yard, and at \$19 and \$20 delivered on the job. Even at these figures there is not a very plentiful supply, and it is more than likely that there will be a further advance as the winter season comes along. A local strike of bricklayers made for decreased call during the early weeks in October, but this has now been settled and a strong demand is again to the fore.

Shows Million Dollar Increase in Building

Newark, N. J., is not backward in topping the list of important communities in the state in regard to building work. The city has hit its gait in fine fashion, and there is every evidence that the present status of affairs will be well maintained into the winter. Figures tell an interesting story—the estimated costs for construction work in the city during October aggregate \$1,207,427 up to the 27th of the month, as against \$248,517 for the same month of last year; in other words, there will be well over a \$1,000,000 increase in October, 1919, building. This is not only encouraging, but to local men in the building trade it is "real ginger." There is no question but what things are humming, and mason material dealers are sharing in the prosperity. Home construction is the big feature of



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is being licensed to manufacturers in the U. S. A. and Canada. It has earned the title of "Popular Tile" because it is easy to make, lay and sell, and is liked by the

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A Trial Shipment Will Convince You. Write Us

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"We use the babbitting over again and do the work ourselves"

"Have been using Nonpareil Anti-Friction Metal for many years, but at first only for babbitting shafting boxes at Dry Press Brick Works. Later tried it for babbitting clay grinder rolls, where we used Bronze metal. Find that it does as well and lasts as long as the Bronze. The Bronze boxes we had to have made, and when they were worn out, had to discard what was left to the scrap pile. Now whenever boxes have to be renewed, we can use what is left of the Nonpareil metal over again and do the work ourselves."

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If there are "grilling conditions" in your plant, we would welcome the opportunity to prove the many advantages of using UNION STEEL CHAINS.

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the work, and brick for this purpose is being used in large quantities; over in Union County, which adjoins Essex County, the slogan is a "house a day" and Newark is taking the hint in a substantial way. The Newark Housing Committee is giving concentrated thought to the proposition, and the results are beginning to show.

Several Plants Close Down for Season

With top speed in brick production at the Hackensack, N. J., yards well into October, a number of the important plants have now closed down the manufacturing end for the season, including the Hackensack Brick Co., Walter Shultz and the Mehrhof yard. At Little Ferry, Henry Gardner is still operating, but expects to curtail producing work early in November. Business has been very good at the different yards thruout the season, taking the whole term on the average, and the call is exceptionally strong at the present time. Labor has tended to retard production to a large extent and stocks would be considerably larger to tide over the winter, but for this condition. Northern New Jersey has been a big user of material from this section, and if not before, motor trucks have demonstrated their great value for long hauls during the past season; large fleets have been used in service and this has been the primary means of transportation. Brick still maintains at \$16 at the yard in this locality, and from \$17 to \$18 per thousand for delivery on the job to nearby points.

Demand Exceeds Supply at Tile Works

The Perth Amboy (N. J.) Tile Works, specializing in the production of floor tile and ceramics, is a particularly busy spot these days, and would be busier were it possible to obtain all the labor desired; this is the retarding factor to desired top production. The works are now giving employment to around fifty persons, and orders are being received to keep the plant moving at rapid pace for many months to come; the call at the present time is far greater than the supply. This plant is equipped with thoroly modern machinery and operates at high efficiency. August Staudt, president of the company, gives personal attention to different features of operation; he is a broad student of ceramics and ever after new ideas.

Keasbey Plant Building \$10,000 Addition

The General Ceramics Co., Keasbey, N. J., is building a one-story addition to its plant to cost about \$10,000. The structure will be about 50 by 100 feet, as a fused silica ware works, and one of the very few such establishments in this country; in fact, it is said that there is only one such other plant of this kind, with modest capacity. This plant of the General Ceramics Co., under the direction of F. A. Whitaker, is well known for its fine chemical stoneware, and production is maintained at a high point at the present time. Contracts are taken for the entire equipping of chemical works.

Production Retarded by Labor Scarcity

The Trenton Front Brick Works, Trenton, N. J., reports business as being fair, but still below normal. Production has been retarded by the scarcity of labor. The call for common brick, quite strong before the local bricklayers'

strike, is again picking up to a good point; present quotations are \$18 and \$19 for first-grade material.

N. Y. Construction Work Forges Ahead

Building construction work is going ahead in the New York district in very encouraging fashion. The borough of Brooklyn is doing the bulk of "big things" in the matter of housing work, and buildings of this character are being erected with great rapidity thruout this section. Long Island City is taking the lead in industrial work and big enterprises, running collectively into millions of dollars, are under way, including buildings for the American Chicle Co., the White Motor Car Co., and others. The labor situation has eased up materially and there is no trouble in the direction at the present time. The effect of building strikes in actual matter of financial loss is well indicated in just what happened in this district in September when things were "tied up." The valuation of permits at New York City dropped from \$26,000,000 to \$5,000,000; at Brooklyn, from \$10,000,000 to \$7,000,000; in Richmond Borough from \$675,000 to \$370,000; and in the Bronx, from \$3,000,000 to \$2,000,000. Building material men are busy at the present time and so are the manufacturers of such products; it looks like "full steam ahead" thruout the winter and if prices do not soar skyward, a number of important projects will materialize at an early date, still enhancing present totals.

Stiff Prices Maintain in N. Y. Market

Face brick is moving freely in the New York market, with price ranging from \$38.50 to \$45 a thousand. Kittanning smooth gray are selling at this latter figure, while Kittanning buffs are bringing \$42; the maganese varieties are quoted from \$42 upwards, with highest grade material at \$48.50; the rough grays are selling from \$41.50 to \$47.50. Rough textured red brick is bringing from \$38.50 to \$42, with smooth varieties and rough mingled at the same figure. Hollow brick in the New York market is selling for around \$18 a thousand as against \$15 a few weeks ago. Clay partition tile now selling for \$100 upwards, according to size, is apparently slated for an early advance. Good grade fire brick has jumped to \$75 a thousand, delivered on the job, as against \$60, approximate quotation, a few weeks back.

In the matter of costs for building work, it is interesting to note that J. P. H. Terry, vice-president of the Turner Construction Co., New York, in close contact with the situation, is of the opinion that next spring will see a rise of about 15 per cent. over present figures. It is his belief that the period of high prices will obtain for the next three or five years, or until conditions fully adjust themselves. The increasing costs are attributed to the steadily and rapidly advancing labor and material prices, higher wages, labor shortage and labor unrest.

Common Brick Shortage Threatens in N. Y.

The demand for common brick, face brick, burned clay products and other building materials at New York continues at a high point. Particularly is this true in the matter of common brick and the call for this commodity has reached a point where a shortage is threatened. To offset the possibility of this condition and eliminate any dealer from securing a "corner" on the material, the As-

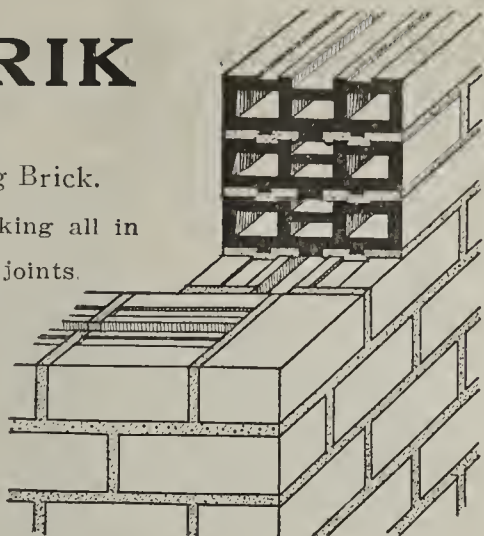
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Have the appearance of solid face brick.
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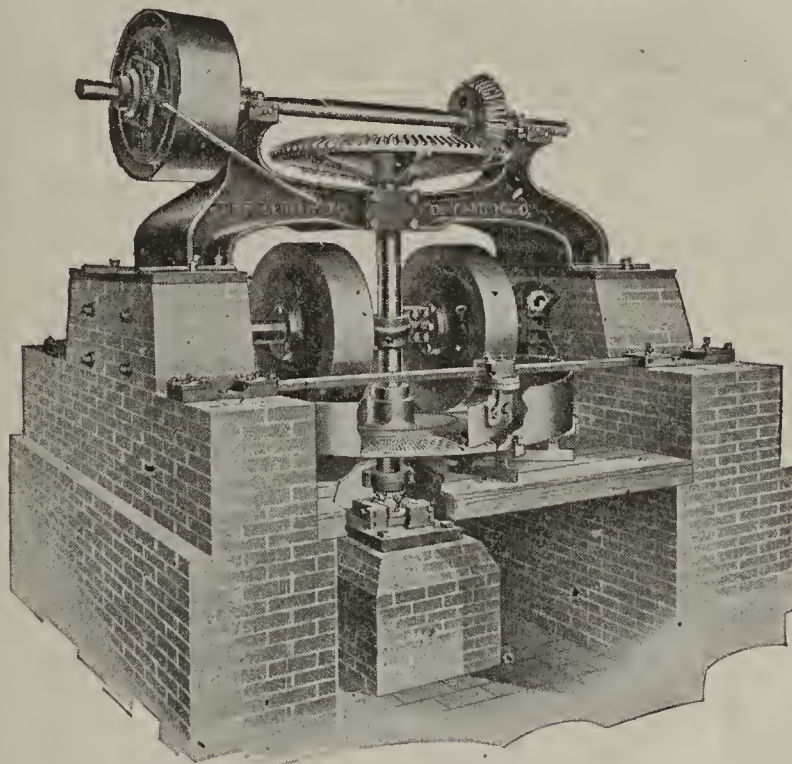
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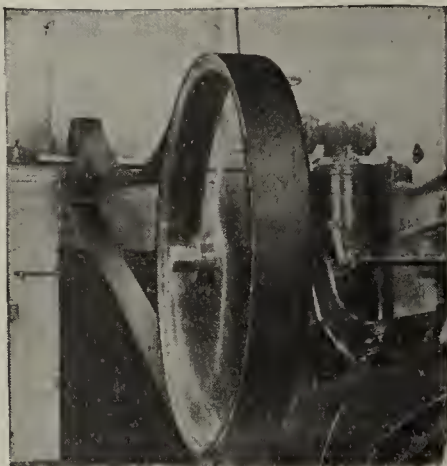
(1) What is the exact outside diameter of the driven pulley, inches?
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Count accurately.....

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Main & McNab Streets

sociation of Building Material Dealers of New York has voted not to stock up common brick this year, as is usually done when the winter season approaches, and the familiar stacks will this year, at least, not be in evidence. A committee has also been appointed to allot quantities of incoming brick to contractors as required for operations now under way. The quantities of brick now coming into the market are just about sufficient for current work and no more, and a number of barge loads are going weekly to New Jersey points. The price of Hudson River common in wholesale lots is holding firm at \$16 per thousand alongside docks; the price for delivery on the job has advanced to \$20.10, as against a little over \$18 about a month ago.

Changes Name to Cover Enlargement

The Chestnut Ridge White Brick Co. was incorporated in Pennsylvania January 21, 1902; was reincorporated in New York March 4, 1911. Originally its business was confined to manufacturing and selling white face brick, but for several years past it has been selling all colors and kinds of face brick and fire brick, and of late, "Pyrobond," which is a fusible fire clay. And now after seventeen years under the old name, it has had its title changed to Chestnut Ridge Corporation to cover its several branches, without making any other change in its business or affairs whatever. The offices of this company are in New York City, with factory at Kunkletown, Pa.

✱ ✱ ✱

To show the extent of housing enterprises in the New York district, the following recent developments are of more than usual interest. The Prenbrook Corporation, New York, has purchased 1,200 lots from William E. Harmon & Co., in the Hyde Park section of Brooklyn, and is making plans for the immediate construction of 1,000 houses; ground has been broken for the first unit of 100, and the entire project is estimated to cost close to \$15,000,000. A thirteen-story, brick apartment, 92 by 150 feet, to cost about \$300,000, will be constructed by the 1067 Fifth Avenue Co., at 1010 Fifth Avenue, New York; a nine-story, thirty-six-family brick and limestone apartment, with terra cotta trimming, will be erected at 180th Street and Creston Avenue, by the Park Realty Co., at a cost of about \$250,000.

✱ ✱ ✱

The Long Island Brick Co., Farmingdale, L. I., N. Y., reports business as very good in their territory. The company has been adding new machinery to its plant and expects to build another factory soon, doubling the capacity of the plant.

✱ ✱ ✱

The Jewettville Clay Products Co., Buffalo, N. Y., has filed notice of increase in capital from \$75,000 to \$150,000.

Large Brick Plant For Rocky Mount

The Faison Brick Co. has been incorporated at Rocky Mount, No. Car., with a capital of \$100,000 and will establish a brickmaking plant on the outskirts of the city.

Cleveland Plants Rushing Production

Improvement in production, and greater outlet in both brick and tile, is the keynote to the industry in the Cleve-

land, Ohio district as first hint of winter arrives. Large producing and distributing interests in the territory to be served by Cleveland firms announce there will be no letup in production during the winter, as there is every indication that building operations will continue on a scale hitherto unapproached during the cold weather period in previous years.

At the Cleveland Builders Supply & Brick Co. orders for brick and tile are now being taken for short notice delivery, according to H. J. Farr, manager of clay products production. Augmented operations at various plants of the company will assure maximum quantities being turned out from now on, he states. Operations at the new Warner Road plant, formerly known as the Newburg Brick & Clay Co. plant, have started during the last two weeks, and at present 250 tons of tile are being produced daily. The Jennings Road plant has been turned back from a shale brick producer to production of hollow ware. The unprecedented shortage of brick, from which period the trade in this section now is emerging, required the use of this plant as a brick producer in order to alleviate that shortage, explains Mr. Farr. All plants of the company now are running full, as the help situation has improved considerably in the last month.

"There is no lack of producing facilities now," says Mr. Farr. "Much of the remarkable rush for material immediately after the war may be said to be responsible for the shortage. There were not sufficient men to handle the production, as they were still in service. Now many of our old men are coming back, and their old places are being filled. As production increases the more normal supply of material will be seen."

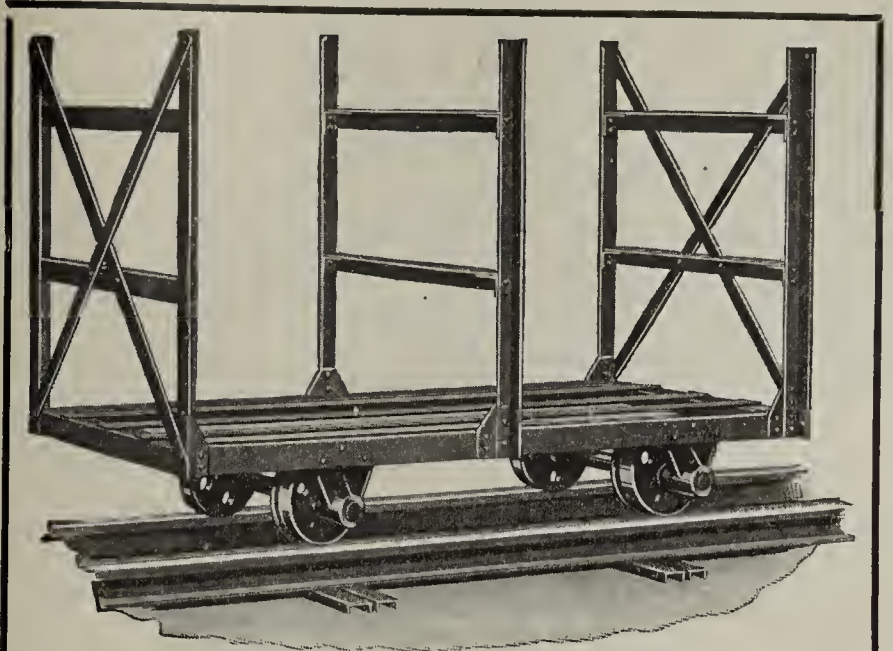
Distribution of face brick and other materials to nearby town dealers is improving with production, according to J. E. Morrissey, manager of brick sales. It is the belief in this branch of the business that any operations that may have been held back for lack of face brick now can be rushed to completion before real cold weather arrives. Among conspicuous orders which have been placed with the Cleveland Builders Supply & Brick Co. lately are those for the Kittaning light courts of the Hanna Building and Hanna Building Annex, which will approximate 750,000 brick.

Coal Shortage Makes Brick Men Cautious

Some brick manufacturers and distributors in the Cleveland, Ohio, district are a bit more cautious in handling new business at the moment because of uncertainty accompanying the promise of a long drawn out coal strike. Already none too well supplied with coal, and with threat by the East Ohio Gas Co. that it will shut off natural gas service from industrial establishments as soon as real cold weather arrives, producers are not keen to accept business with which they cannot guarantee to protect customers.

In order to protect clients in this predicament, the Hydraulic Press Brick Co. is not accepting new business for brick which are not on hand, in process of manufacture or for which there is not sufficient coal on hand to burn. Prediction of further advances in brick prices is offered by O. R. Leach, service manager for the Cleveland district of the Hydraulic as a consequence of the coal strike being continued any length of time. "It is not improbable that there may be no limit to brick prices if the shortage of coal, and consequent advances in price of fuel becomes at all exaggerated," says Mr. Leach.

"Without doubt the coal strike situation will result in



CONKEY DRYER CARS are built, not assembled. They are built to fit your particular requirements. What are the conditions at your plant? Our engineers will be pleased to help you with expert advice. No obligation. Write us.

H. D. Conkey & Company
MENDOTA, ILL.

You can get a higher price for your brick if you guarantee it will be

Scum-Proof

And you can do this with perfect safety by using

R. H. Precipitated Carbonate of Barytes

It neutralizes the salt in your clay so that it cannot appear on the surface of the brick after it gets wet.

But don't accept a substitute—insist on R. H.—the dependable brand.

Write for circular and prices.

The Roessler & Hasslacher Chemical Company

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St. Louis, Mo.
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We carry a complete line of high grade chemicals for the clay industry



Light steel rails

We saved the day for the Clay and Coal Operators in War Times by furnishing BUCKEYE MINE RAILS, whenever and wherever needed, and while many other Steel Mills were running exclusively on other material, you could not have operated without us at that time.

Now, in Times of Peace, we ask that you do not forget us, as we can, and will render the same unexcelled service, and furnish the same high quality of material. "Buckeye means best", and BUCKEYE LIGHT STEEL RAILS are better still. All sections from 12 lb. to 40 lb. inclusive always in stock for quick shipment.

Let us have your inquiries, and we will take the chance of developing them into orders on our books.

THE BUCKEYE ROLLING MILL COMPANY
STEUBENVILLE, OHIO

DOES YOUR PROFIT GO UP IN SMOKE?

Canton Rocking and Dumping Grates in your plant mean a large saving in fuel, or a greatly increased production with the same amount of fuel. By improving combustion, they make a coal saving of at least 10% in comparison with stationary grates. Peak loads can be maintained easily.

If you are interested in cutting down fuel cost and improving combustion, write for Bulletin B, Form 14.

Canton Grate Co.,
1706 Woodland Ave., N. W.
CANTON OHIO

**CANTON GRATES SAVE FUEL
FOR BOILERS FOR KILNS**

higher prices for brick," says R. L. Queisser, head of the R. L. Queisser Co. "The car situation is improved, but still is way behind, said scarcity of fuel to manufacture brick, as well as to haul it, will mean a higher market."

Building and Loan Reports Show Large Gain

By a recent compilation of building and loan reports in Ohio, made public recently, it is seen that there was a net gain of \$21,679,740.95 in assets in the 692 institutions in the Buckeye State as compared with a year ago. The reports show that all of the building and loan associations have total assets of \$381,798,703.22. Of the assets \$64,816,827.64 are in the country institutions which have shown a remarkable growth during the past year. Cincinnati, Newark and Delaware are the only cities showing decreases in assets. Dayton with a growth of more than \$2,000,000 leads all other cities in prominence of building and loan associations. Assets of the principal cities in 1919 were: Dayton \$42,251,711; Columbus, \$41,072,331; Cleveland, \$37,728,757; Cincinnati, \$37,340,541; Youngstown, \$16,812,624; Springfield, \$10,647,109; Toledo, \$10,303,221.

Plan to Make Good Roads a Civic Question

Plan for a county council in Cuyahoga County, Ohio, to cooperate with similar bodies in other counties of the state, with a view toward making good roads a civic question, rather than a political problem, will be adopted by the Automotive Association of the Cleveland Chamber of Commerce, following the suggestion of G. F. Rudisil, field secretary, the Ohio Good Roads Federation at a special meeting of the Cleveland group recently. All civic organizations in Cuyahoga County will be asked to appoint representatives to form this council.

Mr. Rudisil's argument is that Cleveland's trade radius is half what it might be because there are 62 gaps, totaling close to 400 miles, in the 2,400 miles of paved highways leading into Cleveland. He contends that the \$2,500,000 being raised each year for road improvement in Ohio is inadequate for the purpose.

Columbus "Own a Home" Campaign Success

The "Own a Home" campaign in Columbus, which was started several months ago and pushed with vigor by a committee representing practically every line of industry and more especially building trade, has been wonderfully successful. Building has been going forward in the Buckeye Capital at high speed and permits within the city limits have averaged about 25 weekly since the start of the campaign. These permits only include the dwellings projected. It is estimated that fully 25 more houses are started weekly in the suburbs and outlying districts which do not come under the jurisdiction of the city building department. The "Own a Home" campaign was under the charge of Kline L. Roberts as director and publicity manager.

Sells Entire Output of Face Brick Plant

Emmett C. Howard, manager of the Columbus Fire & Face Brick Co., Columbus, Ohio, announces the closing of a contract for the entire output of face brick of the Webster Brick Co.'s plant at South Webster. A new and distinctive texture in both shale and fire clay in browns, tans, dark and light goldens and buffs is now ready for the market, and Mr.

Howard expects to appoint agents in all parts of the country within a short time. Fifty to sixty thousand of these brick will be produced per day, and will be sold under the trade name of "How-Tex." Mr. Howard reports several large orders already booked and the outlook exceedingly bright for the sale of this material. Also that they are in excellent position to make immediate delivery.

Big Bricklaying Job Requires Laborers

It is thought that not less than 300 bricklayers will be employed on the Standard Oil Co.'s plant being erected below Ironville, Ohio, with the opening of work next spring. It is estimated that about 9,000,000 brick are to be laid, including buildings, stills and smokestacks. Good facilities for all workmen are provided on the grounds, including meals and beds. Free reading rooms, baths, movies and bunks are offered as inducements to laborers together with a wage of 50 cents an hour for a sixty-hour week. Provisions for transportation to and from Toledo are to be made by the company.

Ohio Face Brick Prices Continue Steady

Prices for face brick in Central Ohio territory continue steady at levels which have prevailed for some time. The demand has been fairly good but there has been slight falling off recently due to the approach of the winter season and the adverse ruling of the railroad administration about the use of open top cars. But the tone of the market is fairly good and it is believed that there will be a fairly steady trade during the winter months, especially if the winter is an open one.

Renewed Activity in Fire Brick Business

There are signs of awakening in the fire brick business according to manufacturers and jobbers in that line in Central Ohio territory. During the past few months manufacturers have been content to use their surplus stocks and have not been in the market to any extent, but recently there are signs of renewed activity and quite a few inquiries have been received. Some orders are booked and shipments are now going forward.



W. T. Matthews, salesman of the Claycraft Brick Co., of Columbus, which operates plants in the Hocking Valley and at Groveport, Ohio, reports a good run of orders. The car supply is now better and little difficulty is experienced in getting shipments off promptly. According to Mr. Matthews there is no special shortage of labor at the plants of the company.

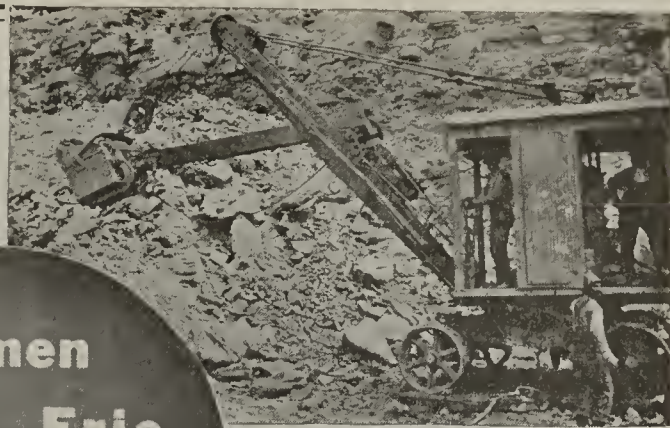


Two men were killed and a third was injured in an explosion of a charge of dynamite in the clay mine of the Empire Clay Co., at Empire, Ohio. The men were using a needle drill on a charge which had failed to explode when the accident happened.

So. Carolina Plants Taxed To Capacity

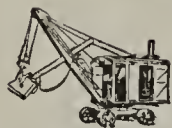
Lincoln S. Morrison, treasurer of the Carolina Brick Co., Florence, So. Car., writes: "The demand for brick in our section is good, and all the plants are taxed to full capacity, in an effort not to delay building operations."

The ERIE Shovel is reliable. Built far stronger than the usual standard.



**"3 men
and 1 Erie
provide our
shale"**

"We are tickled to death with our ERIE Shovel—could not run our plant without it. Three men and the ERIE easily give us enough shale to keep the plant supplied—enough for 100,000 brick a day."—D. D. Evans, General Mgr., WEST VIRGINIA PAVING AND PRESSED BRICK CO., Huntington, W. Va.



Serves either as steam shovel or as locomotive crane, with clamshell bucket.

The W. Va. Paving & Pressed Brick Co. went into the steam-shovel question very thoroughly before buying their ERIE. They carefully compared different makes of shovels.

We advise you to be just as careful. Get the facts—then pick the best shovel.

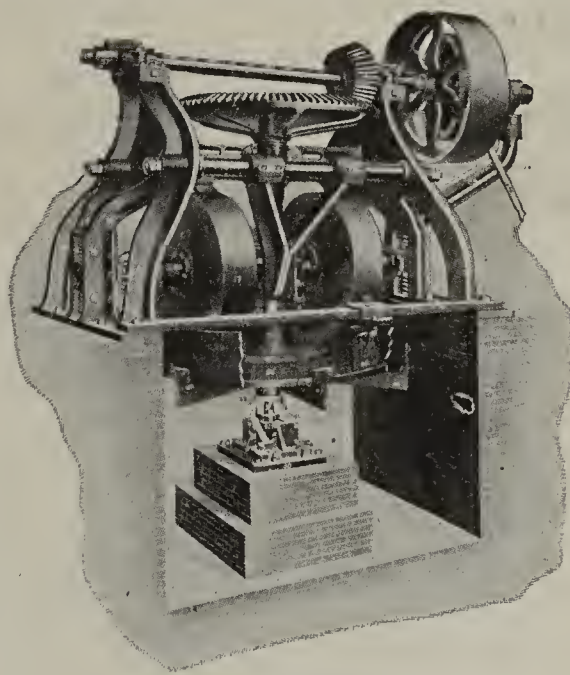
Write for a copy of our Bulletin B.

BALL ENGINE CO., Erie, Pa.

Builders of ERIE Shovels and Cranes; BALL Engines.

ERIE Revolving Shovels

BALL Engine Co. Erie, Pa.



Machines for

Crushing, Grinding, Pulverizing, Empounding, Tempering and Mixing, Elevating and Conveying All Kinds of Materials, STEAM PRESSES FOR MAKING

Sewer Pipe, Drain Tile, Hollow Blocks, etc. All of the highest class designing and construction are manufactured by

THE STEVENSON COMPANY

General Offices and Works: WELLSVILLE, O.

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A Pump is Only as Serviceable as the Valve You Put Into It

A man must be sure of his valve because no other part of a pump gets greater wear. And nothing will cause it to go 'dead' and become ineffective quicker than a defective valve. The fact that it works out of sight, too, makes it absolutely necessary to put in a pump valve that you know is reliable.

Jenkins Pump Valves have proved their worth by actual performance. It is a reason for their extensive use.

Jenkins Pump Valves are made in several compounds—each compounded to meet the conditions of some particular service.

Know genuine Jenkins Pump Valves, too, by the Jenkins "Diamond Mark."

JENKINS BROS.

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Rollin's Barium Carbonate

"We find that the use of Barium not only entirely eliminates the scum caused by sulphates, but deeper and richer colors result than would be expected." So writes a clay products company in Kentucky.

It is obvious to any clay products manufacturer that Barium Carbonate added to the pug mill or to the dry pan will produce brick and tile that command a higher price. It will build up more business than an inferior product which is "off color" and marred by white streaks.

Barium Carbonate makes the salt glaze stick to sewer pipe.

We can show you how the appearance of your ware can be improved, and can give you names of clay concerns who are profiting today by the use of Barium.

Write Us NOW

The Rollin Chemical Co.
(Inc.)

Charleston, W. Va.

To Make Shale Products at Columbia

The Richland Shale Products Co., of Eau Claire, a suburb of Columbia, S. C., was commissioned with a capital stock of \$75,000 to manufacture brick, tile and other shale products. A. T. Blatchford and Deems Haltiwanger, both of Columbia, head the company.

Construction Work Resumed at Philadelphia

With the settlement of labor difficulties at Philadelphia, Pa., including the local bricklayers' strike, construction work is being resumed at an encouraging status, and it is currently predicted that the city is due for a real "boom." One thing sure, things are opening up in a lively way; among the projects now in course of erection are police and fire station at Twenty-fourth and Ritner Streets; new factory for the Quaker City Rubber Co.; babies' hospital; office building at the Cramp Shipyard; work for the Government at the League Island Navy Yard; armory at Thirty-third Street and Lancaster Avenue, and a number of large apartment houses and other housing enterprises.

To show the great popularity of brick at Philadelphia, Pa., it is estimated that the bricklayers' strike during the last few weeks held up projects with amount of brick work totaling about \$1,500,000, labor and material. With an advance granted to the men of \$1.10 an hour, as against a former rate of 87½-cents, this amount will increase by about \$375,000, and which expense under contract work will have to be defrayed by the mason builders. The local brick yards are commencing to pick up in fine style and large quantities of material are moving for current operations.

Building Prospects Bright for 1920

Not only is building showing marked improvement in the West, but the East is exhibiting great activity with indications that clay products plants of this territory will soon be taxed to capacity, according to President H. M. Keasbey, of the National Fire Proofing Co., Pittsburgh, Pa.

"Conditions in the building trade are rapidly improving and prospects for a large building business next year are, in my opinion, very bright," said Mr. Keasbey. "This is indicated by the increasing demand for hollow tile in the Pittsburgh district and in the Middle West. The demand will tax the capacity of all plants in this district. The Eastern territory is also beginning to show improvements in the building industry. A number of large operations are pending in New York, with the prospects of going ahead in the near future.

"The building public is beginning to realize that the present price level will not be reduced and I believe the cost of building materials will advance, owing to increasing wages and scarcity of labor. Therefore those who have been postponing building operations hoping for lower prices will be disappointed and will be obliged to pay more within the next few months."

Pennsylvania Concern Purchases Ohio Plant

The Liberty Clay Products Co. announces the purchase of the plant and business now owned by the Diamond Brick & Tile Co., of Palmyra, Ohio. After November 1, all quotations, sales settlements and transactions will be made thru the general office of the Liberty Clay Products Co., Safe Deposit and Trust Building, New Castle, Pa.

Prices Holding Firm at Philadelphia

The opening up of the demand for building materials of all kinds is being felt by dealers and manufacturers in the Philadelphia district. Brick, common and face, hollow tile and other burned clay products are moving at a good pace, with prices holding very firm at present levels; the inclination for a rising market and an advance in different basic commodities seems due at an early date. Common brick is selling for \$19 and \$20 a thousand for good grade material delivered on the job. Hollow building tile is quoted from \$60 upwards at the different dealers, according to size; clay tile partition blocks are around the \$90 and \$100 mark for the popular sizes; fire clay is selling for about \$25 a ton, delivered, while fire brick, first grade, is quoted at \$65 and \$70. The call for face brick is resuming at a good status and high grade varieties of this material are selling from \$40 to \$50 a thousand. The call for drain tile, sewer pipe and similar specialties is on the increase.

Efficiency Greatest Need of Present Day

In commenting upon local building work and construction operations in general, O. W. Ketcham, head of the company of that name, manufacturer of terra cotta products and large operator in face brick, says that efficiency is the greatest need of the present day. With the great demand for buildings of all kinds and facing a scarcity of hands, it behooves all to speed up. A full day's work by all on the 100 per cent. basis of efficiency will, in Mr. Ketcham's opinion, go far to soon relieve the situation and clear the way for more. Business, the volume of which we have never seen stares us in the face, and in this connection he says, "Are we going to let the best opportunity ever offered go by? No man, sane and possessed of all his faculties, will do so?" Mr. Ketcham is president of the Master Builders' Exchange, and in very close touch with the situation.

New Wisconsin Incorporation

The Chippewa Brick Co. has been incorporated at Chippewa Falls, Wis., with a capital of \$50,000. The incorporators are William Henneman, J. Jaekle and Walter A. John.

Vesper Plant Has New President

G. A. Perry, who has been president of the Vesper Clay Products Co., of Grand Rapids, Wis., since its organization, has resigned, but will remain with the company as stock salesman. George M. Hill has been elected to fill the vacancy.

To Make Hollow Tile At Menomonie Plant

The Wisconsin Red Pressed Brick Co. is installing new machinery and equipment at its plant in Menomonie, Wis., preparatory to the manufacturing of hollow tile in addition to brick as now manufactured at the plant. Experiments have been going on for some time at the yards of the company and it has been demonstrated that the local clays are adapted to this purpose. New brick-making machinery is also being installed and as a result of this, the yards will be operated all the year round and the capacity of the plant be doubled. The present capacity of the yards is 6,500,000 brick. An investment of \$30,000 is represented

Perforated Steel Screens Of Every Description

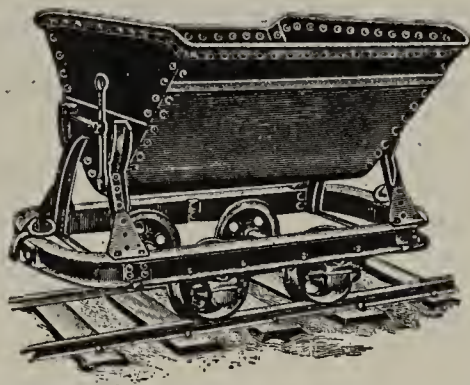
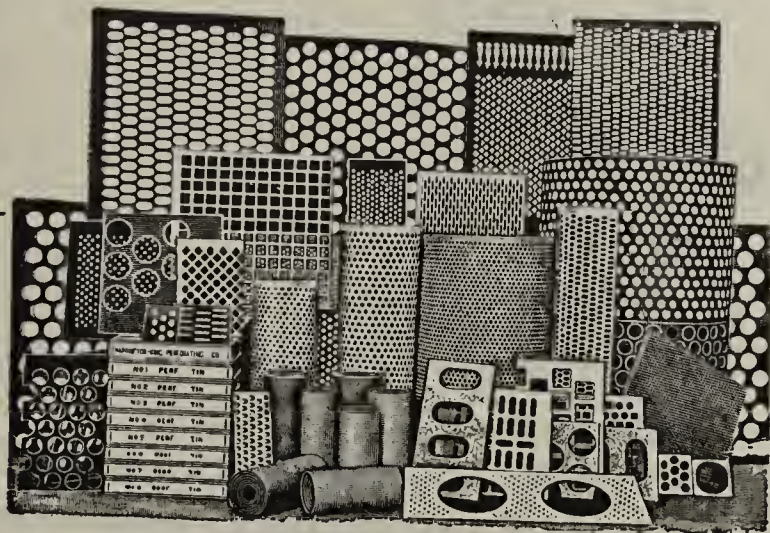
For Screening Clay, Shale, Sand,
Gravel, Stone and Cement

No Other Screens Will Give You Equal Capacity,
Durability and Satisfaction

The Harrington & King Perforating Co.

635 N. Union Ave., Chicago, Ill.

NEW YORK OFFICE: 114 Liberty St.



ONE OF MANY

Here is one design. You will find it popular because of its sturdy construction, capacity, and its practical features that are the result of many years experience.

We can supply you with other standard types. Where conditions are peculiar, we design and manufacture special cars.

Whatever your requirements—Platform and Dryer Cars, Dump Buckets, Barrows, Steel Wheels, etc.—our engineers will be pleased to help you. No obligation. Our Catalog No. 8c is yours for the asking.

THE BIEHL IRON WORKS, Inc.

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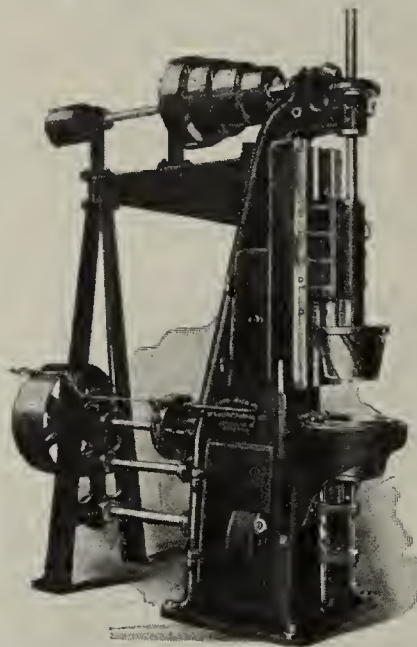


We specialize in steel car wheels

Making Two Profits with One Machine

A contractor set out to buy \$10 worth of brick. He was going to get \$20 for the brick if delivered the same day. But he lost the \$10; and having no credit with the brick manufacturer, was unable to deliver the goods to buyer. Loss, \$10? No, \$20—which amount the contractor would have pocketed had he delivered the goods.

Losses in idle labor means corresponding losses in sales—double losses.



By utilizing your workers' spare time during "off periods," you not only maintain your quota of production, enabling you to make the profit as planned, but you save the cost of idle workmen's time. You make a double profit.

This double profit is assured you with a Baird Pottery Machine. It is simple and economical in operation, costing practically nothing in labor, as any idle workman can operate it. Moulds Flower Pots, Stoneware, Runner Brick, Crucibles, etc. The market for its products is unlimited. Let us explain to you how other plants are profiting by keeping their idle help busy on one or more of these machines. Send along a sample of your clay.

BAIRD MACHINE & MFG. CO.
265-69 Jefferson Avenue E., Detroit, Mich.

FIRE BRICK AND THE STEEL STRIKE

We have been informed that the little row "bechune" Messrs. Fitzgerald and Gary has made a **slump** in the sale of fire brick and other refractories.

But—

Building Supply dealers are replenishing their stores of fire brick right along. They are supplying this material to various industries. Why not cultivate the good will of these dealers and tide over, not only this **slump**, but also any future contingencies, by advertising your ware now in

BUILDING SUPPLY NEWS

610 Federal Street

Chicago

Endorsed by National and State Associations of Dealers
BUILDING SUPPLY NEWS issues a current price list of your commodities in 73 cities thruout the U. S.

by the new equipment, which is made necessary by the present scarcity of labor.

Wyoming Plant Again Changes Hands

The brickyard at Lovell, Wyo., is again to begin operations under a new management. W. B. Snyder, R. E. Richardson, S. T. Smith, W. E. Pearson, H. S. Jolly and L. V. Stryker have organized a new firm and expect to start brick manufacturing shortly. They have rented the Galusha brickyard and ordered a new dry press. It is expected to turn out 40,000 brick in the next ninety days, which are to be used in building a glass factory and tile plant.

Toronto Brick Co. Acquires Another Plant

The plant and property of the Brandon Pressed Brick Co., at Milton, Ont., which was sold by auction on October 15, was purchased by the Toronto Brick Co., of Toronto for \$60,000. There are 104 acres of land. The plant is served by the Canadian Pacific and Grand Trunk railways. The capacity is from 40,000 to 60,000 brick per day and on the property are dwelling houses, boarding house, kilns, etc. Included in the sale is all the machinery, patterns, power equipment and other appliances required about a brick plant.

Clayburn Co. Takes on New Line

J. J. Plommer, secretary-treasurer of the Clayburn Co., Ltd., Vancouver, B. C., is visiting the president of the company, Roger Millar, at Ingersoll, as well as attending to business for the company at Montreal, Ottawa and Toronto. John Millar has retired from active management to his farm and J. J. Plommer is now manager with headquarters in Vancouver. J. W. Ball succeeds Mr. Plommer as superintendent of the plant. The Clayburn Co. has added to its lines the Heath hollow-ware unit which it will manufacture in the future. Great quantities of British Columbia timber are being exported to the state of Washington, leaving a growing market for brick in Vancouver and surrounding cities. The business outlook for brick on the western coast is excellent. The Heath tile is the invention of Frederick Heath, and is manufactured at Tacoma, Wash., by the Heath Unit Tile Co.

✻ ✻ ✻

C. M. Thompson, formerly manager of the Alsip Brick, Tile & Lumber Co., Ltd., Winnipeg, Man., is now in charge of the building supply department of the Winnipeg Supply & Fuel Co., Ltd.

QUESTIONS AND ANSWERS

(Continued from Page 872)

of drying. The theory of drying is to introduce clean dry air and allow to become saturated with moisture and then draw it off, allowing fresh air to enter again and repeat this performance until the moisture content has been completely carried away. It would seem, however, that they are endeavoring to complete the entire drying process by the use of heat alone, which is not only a long laborious and expensive operation, but very likely to deceive them as to where the original cause of their difficulty lies.

"The fact that the top of the block dries first is of no

moment as the heat in the dryer would tend to cause some circulation, which would move upward and thereby cause this drying action to be evident first on the top of the blocks.

"The character of cracking that they are having would indicate that the difficulty lies in the material itself and in the dryer, rather than in the die, as it is stated that the cracks are either the full length near the rib, or in the outer corner, or perhaps across the middle in the opposite direction.

"The vertical cracks would no doubt be caused by imperfect flow over the bridge of the die, but the horizontal cracks are no doubt caused by a lack of homogeneity in the material.

"I do not attach any significance to the fact that they make four inch drain tile without getting any cracking, inasmuch as this is the easiest class or shape of hollow ware to manufacture in the whole category, and many plants are able to make this which cannot progress with the more difficult shapes. The drying strains in circular ware and particularly on pieces of such small cross section as four-inch drain tile are very small and are all *toward* the center, and not likely to cause the difficulties that are evident in shapes which have more than one core and which are not exactly symmetrical as regards being either square or round.

"If I were handling this proposition, I would first examine the material as it comes from the die and take several of the blocks, stand them on end, and pull them apart by hand. If there is a tendency towards cleavage or bridge cracking it will be readily seen at this point, as the material will separate along the lines where it passed over the bridge from the machines and this would be a well defined cleavage like a knife or saw cut.

"I would then open up the body of the ware by introducing some ground grog or calcined material, but would be very careful to keep this fairly course, which would assist in the drying operation, and also reduce the strain set up in drying attributable to the very fine grained material.

"I would make the material carry all of this coarse grog that it reasonably could and still stand up without collapsing on issuing from the die.

"I would fill one tunnel with this class of material and then attempt to alter the drying operation by allowing sufficient draft to enter the tunnel to carry forward the moisture laden air and refill the tunnel with fresh air as is the practical principle of all dryers. I would further see that the entrance end of the tunnel was no hotter than the surrounding atmosphere outside, as I think that one hundred degrees is probably too hot for the material when it first enters the tunnel, but the exit can be considerably hotter.

"I will be interested to have you advise me how these experiments turn out, but I cannot help but think that opening up the body and examining the die structure and then modifying the drying operation would be of large assistance and I would lay particular stress on the introduction of the grog. I would further say that correct die manufacture is the fundamental of the hollow ware business and is an extensive study which cannot be taught by correspondence."

✕ ✕ ✕

Florida is spending more than \$2,000,000 on new hotel work in preparation for the greatest tourists' year in history.

✕ ✕ ✕

The housing situation in Berlin has become so acute that the municipality is renting cells in the old city jail.



Flexco-Lok Steel Lamp Guards Are a real necessity

Electric lights by their very nature are fragile and easily broken. The sharp "bang" of a breaking bulb is a familiar sound in every shop and factory. Every broken lamp means a definite loss and increases the overhead expense. FLEXCO-LOK Expanded Steel Lamp Guards cut this waste to a minimum.

The FLEXCO-LOK Lamp Guard is made of expanded steel, well coated with tin. It is easily adjusted and is LOCKED with a key. This prevents unauthorized removal.

FLEXCO-LOK Lamp Guards safeguard your employees and the work in progress from the danger of broken glass. They reduce the fire hazard.

A single broken or stolen lamp costs more than a guard.

Ask your dealer or write for catalog and prices.

Sole Manufacturers.

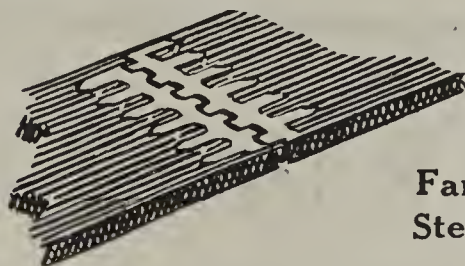


Flexible Steel Lacing Co.,

Dept. L. G. 32

522 S. Clinton St.

Chicago, Ill.



We also manufacture the
**Famous Alligator
Steel Belt Lacing.**



SOLID WOVEN

Stanley Belting

Has in addition to long wearing qualities—the pliability, resistance to dampness, and special selvage edge which makes it an ideal belt for brick and clay plants.

Its great flexibility gives it a greater arc of contact on your pulleys—and permits it to transmit more power at less tension.

It is Solid Woven and the stretch is very slight—one adjustment, the second or third day, being generally all that is necessary.

There are no layers sewed or glued together which may rip apart—and it is treated with a compound that minimizes the effect of water, steam, oil and gases.

Stanley Belting Co.

34 Clinton Street, Chicago, Ill.

The LETTER BOX

A Place Wherein Letters
That Have General In-
terest Are Published and
Commented Upon

An Important Correction

In the October 7, 1919 issue of *Brick and Clay Record* the following item appeared under Ohio news notes and as it is misleading, I am writing you suggesting that you make a correction of same.

"Report comes to hand that City Manager Barlow, Dayton, Ohio, will ask the city commission to approve the purchases of brick necessary for the repaving of Forest Ave., from Lehman St. to Neal Ave. This street was paved in 1914 with block but it was found that the car traffic loosened the block and allowed the water to undermine the foundation. Brick will be used in the new paving, the railroad company dividing the cost of the work. It is estimated that the improvement will cost about \$12,000. This item will prove of unusual interest because when this particular project was fostered by former City Manager Waite, who made an address before a meeting of the National Paving Brick Manufacturers' Association at the Congress Hotel, Chicago, a year or so previous, he indicated his absolute faith in brick pavements, but seemingly, later on changed to wood block. However, upon criticism made by the Manufacturers' Equipment Co., he denied that he ever favored brick pavement. As a result, wood block was installed and the street today is a fright, despite the fact that the pavement was laid but a few years ago. It is interesting to know that paving brick is to replace the wood block."

In the first place the contract for the wood block paving on Forest Ave., in Dayton, Ohio, was let before City Manager White, and Service Director Barlow, the latter now being City Manager of Dayton, Ohio, took office.

It is true this paving was done while they were in office, but they had nothing whatever to do with the specifications or laying of the paving, except to see that the specifications prepared by former administration were carried out.

These blocks were laid on sand facing and as I remember sand filler was used, instead of asphalt filler, and while the wood block paving is in good condition north of Neal Ave. where the street car line turns, that part south of Neal Ave., in which the street car tracks are laid, is in bad shape, particularly between the car tracks, as the block seem to float out after a heavy rain.

You will see therefore, that neither Manager Waite nor Manager Barlow, had anything to do with the paving, and they are now to use brick pavement between the car tracks only.

While the gentlemen referred to have used wood block on several portions of the principal streets and granite block on some of the others they have also used vitrified paving brick on the greater portion of their work.

Trusting that you will make this correction in the next issue of *Brick and Clay Record*, I am Yours very truly,
The Crume Brick Co., W. H. Crume, Pres.

Did This Happen On Your Plant?

The following letter, received from a man who has been a faithful reader of *Brick and Clay Record* for over five years, speaks for itself. It is passed on for what it may be worth to other readers of this magazine:

"It was with deep regret I cancelled my subscription to *Brick and Clay Record*, but not filling a position where the magazine would interest me as it did in the past, I decided to stop taking it.

"I, like the twenty thousand or more other soldiers, when my country was thru with my services in her great army, found a man that stayed behind filling my position and the company, believing him to be the best man, kept him. Before I entered the army I was foreman in a brick yard and now I am working for a living at another line of business.

"Hoping this will make it clear to you why I quit the *Brick and Clay Record* I am."

FINE CERAMIC MANUFACTURE

(Continued from Page 869)

sufficient space for such an improvement, and as soon as the kiln goes thru further development stages their use will become more general, and very quickly.

\$10,000,000 Porcelain Works for Bethlehem

The Bethlehem Spark Plug Corporation, Bethlehem, Pa., formerly known as the Silvex Co., has filed articles of incorporation under Delaware laws with capital of \$10,000,000. The new incorporation is designed to provide for general expansion, and plans are under way for the construction of a large new porcelain works, estimated to cost about \$500,000. with machinery and equipment. This plant will be devoted to highest grade production, and will give employment to about 400 persons for initial operations. It is expected to have the structure ready for occupancy within the next 12 months. E. H. Schwab is president of the company.

Scio China Co. Builds Siding

Materials have been delivered for the building of a siding for the new plant of the Scio China Co. at Scio, Ohio. Building materials have been ordered, and these will be delivered as soon as the siding is completed. This plant will have seven kilns, and will be operated jointly with that of the Albright China Co., at Carrollton, Ohio. As the latter plant has nine kilns, the two firms will have a shipping capacity of sixteen kilns. Two dinnerware shapes will be made at the new plant, one a fancy shape and another a plain shape. Operations are not expected to start before next spring, altho it is possible that ware will be shipped on or about April 1. Numerous applications are being received by the Scio company from pottery workers who are now employed outside the East Liverpool district.

Mitchell-Bissell Co. to Build New Plant

The Mitchell-Bissell Co., Trenton, N. J., manufacturer of textile porcelain specialties, which has been operating for some time past in a portion of the plant of the Cook Pottery Co., Prospect Street, is planning for the immediate erection of a new plant for its exclusive occupancy. A tract of land, 250 by 327 feet on Brunswick Avenue, has been acquired for this purpose, and plans are now being prepared. The company's present capacity will be largely increased at the new works and it is expected to give employment to about 300 persons for initial operations. The production of the company has met with remarkable success during months past and thruout the war period, and orders are on hand for deliveries for a considerable

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- 103-C—3½ to 5 cubic yd.
- 88-C—3 to 4 cubic yd.
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- 68-C—2½ cubic yd.

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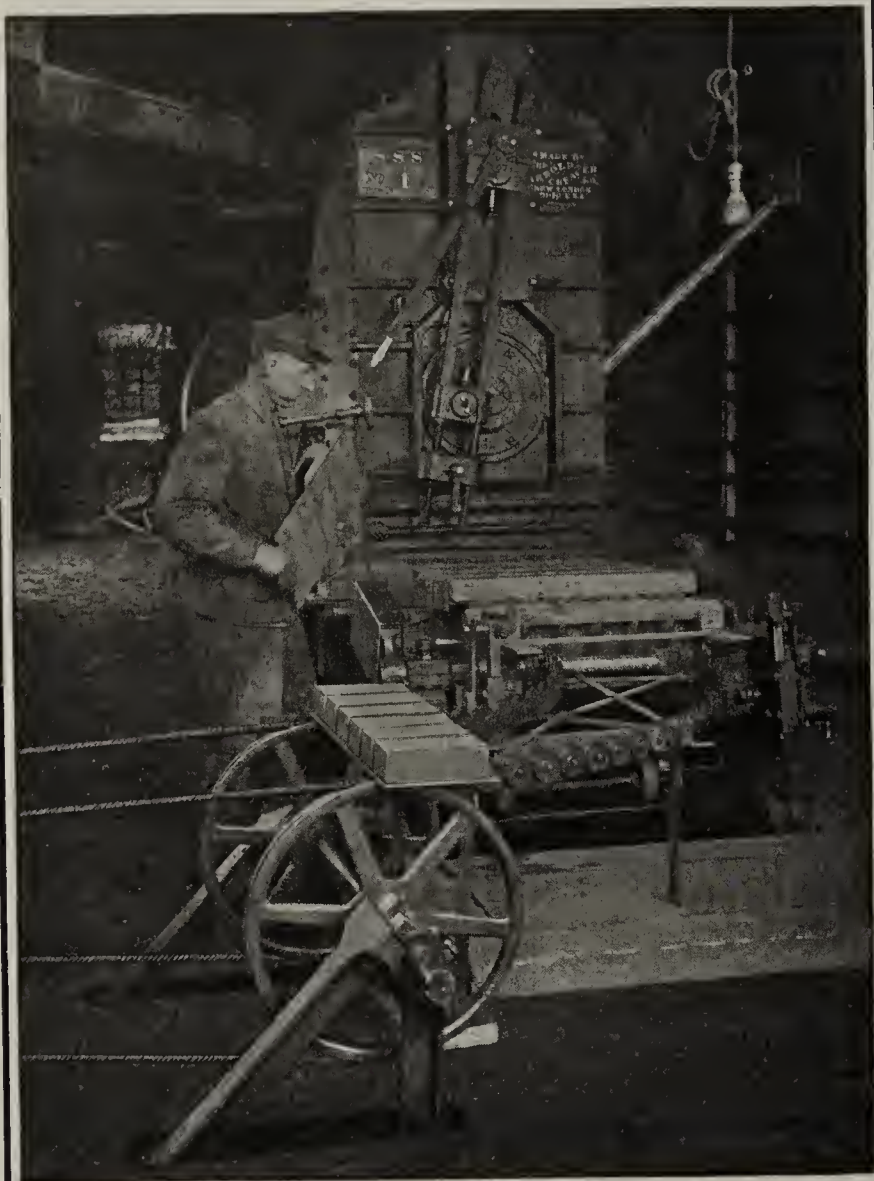
BUCYRUS COMPANY SOUTH MILWAUKEE, WIS.

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Salt Lake City

152



"The S S S Special" Automatic Soft Mud Brick Machine



The "S S S Special" is the ONLY Automatic Soft Mud Brick Machine. It is Brick Machine, Bumper, Dumper, and Sander, all combined in one Great Machine.

**It Saves Labor and
Improves Your Product**

The "S S S Special" means
Improvement Advancement Progress

The Arnold-Creager Co.
New London, Ohio

period ahead. One of the heads of the company is now in Germany on a business trip.

Trenton Potteries Co. Honors Its Soldiers

In honor of the men at its plant who were in their country's service during the war, the Trenton Potteries Co., Trenton, N. J., gave an entertainment and reception at the Crescent Temple, on Wednesday evening, October 22. A fine musical program, opening with the "Star Spangled Banner," and a number of able addresses were thoroly enjoyed by the large gathering. Gifts were presented to all of the ex-soldiers, with appropriate remarks, by John A. Campbell, president of the company. During the course of the evening a handsome bronze tablet was dedicated to six employes who lost their lives in the world war. It will be placed in the company's offices. There was a total of 116 men from this plant in the service. Much credit is due to the general committee in charge of the entertainment.

Potters Sold Far Ahead

Judging from the manner buyers have been visiting the domestic pottery market of late, the general demand for American dinnerware will be active for an indefinite period. Pottery manufacturers in the East Liverpool district have booked business ahead that will insure steady operations until the fall of next year. The majority of the buyers who are now going into the market are booking business for January, February and March delivery, altho others have bought for April, May and June delivery. There has also been a favorable inquiry for American dinnerware from Canadian buyers, and no small amount of merchandise has been sent to southern border ports for export purposes.

Chicago to Have Vitreous China Plant

The manufacturing of vitreous china dinner and hotel ware in Chicago, Ill., within a short time is now possible thru the organization of the "K. B. H. American China Co." of which John G. Hollmeyer and his brother are at the head. The plant is to be located in Norwood Park, Chicago. Mr. Hollmeyer was in the East Liverpool district recently placing order for new shapes and also for the purpose of buying machinery. The demand for hotel ware in the Chicago district is growing rapidly, according to Mr. Hollmeyer and the starting of the only plant of the kind in that territory is being looked upon as a keen business venture.

Stacking Up Advance Orders at Cook Plant

The Cook Pottery Co., Trenton, N. J., is very busy at the present time at its electrical porcelain and chinaware plants. The first noted is turning out large quantities of material for a number of the leading electrical manufacturers and orders are being received for deliveries weeks ahead. The production is very high grade and includes a wide variety of specialties. The chinaware plant is also stacking up advance orders, and capacity is being maintained at the highest possible point, with labor as the one offset in this direction. Charles Howell Cook, head of the company, celebrated a birthday on October 20, receiving congratulations from his many friends in the ceramic field in all parts of the country. Mr. Cook is now president of the Tuberculosis League of Trenton, and is doing highly commendable work in this capacity.

Series of Lessons to Apprentice Pressers

The Thomas Maddock's Sons Co., Trenton, N. J., inaugurated a series of lessons to apprentice pressers at its plant on October 16. The course of study will be given in the apprentice shop, every other Thursday morning, with O. C. Short, educational director in charge. The first lesson covered an interesting and instructive talk on "Origin of Clay and Its Properties," by Mr. Short, while the second, on October 30, with sessions in the glost wareroom, was given by William Kelly on the subject of "Troubles of Bad Punchings." The company held its "Salesmen's Week" at the plant, October 20 to 25, which proved a very interesting and important event. Joseph Sullivan, advertising manager, has recently returned from a business trip to Chicago.

Sanitary Pottery Help Very Scarce

At the regular monthly meeting of the Sanitary Pottery Manufacturers' Association held in Pittsburgh, Pa., the manufacturers were a unit in the expression that sanitary pottery help is scarce. General business among sanitary pottery plants is decidedly active now, due to increased building activity thruout the country. More or less ware is also being exported. The sanitary plants in the Trenton, N. J. territory are reporting more business, while those located in the West Virginia districts are operating on more favorable schedules than since before the war.

Pottery from Coal-Mine Clay

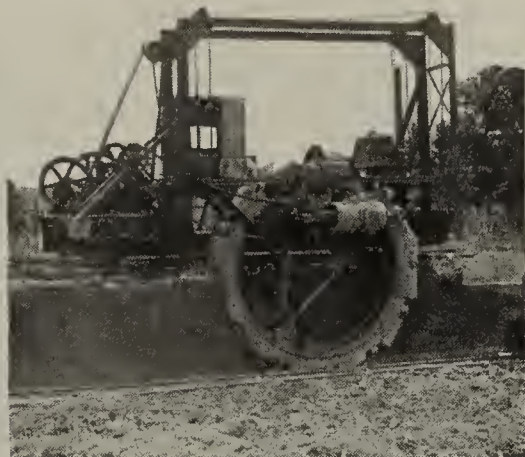
The London "Times" reports that a collection of stoneware pottery (including a pattern of an old-fashioned toby jug) which has been manufactured from clay extracted from a coal mine is being shown at Wigan, Scotland. The clay is found in the Mountain Mine, and is mined together with the coal. It is estimated that there is enough clay to carry on the manufacture of stoneware pottery for the next fifty years at least.

Revival of an Old Industry

There is being held in London, under the auspices of the Kent Education Committee, an interesting exhibition of household pottery loaned by people who had brought articles from Tunis, Italy, Spain, Switzerland, Bavaria and Austria. There are also specimens of England village pottery, particularly interesting with a view to reviving the Kentish pottery industry of 1,500 years ago, examples of which are to be found in the Maidstone Museum. Suitable clay is said to be procurable within easy distance. The pottery exhibited includes basins, jugs, cups and saucers, bowls, and salt cellars, some of which had cost but a few pence in their place of origin. They are simple and good in form, attractive in color, and inexpensive—qualities which it is hoped to reproduce locally.

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Mold-makers have started to work at the No. 4 plant of the D. E. McNicol Pottery Co., and work in the sagger shop will commence within a few weeks. This firm will feature the making of yellow ware only in the ten kilns at this plant, which will give it a capacity of twelve kilns on yellow ware, including the two kilns which the firm has been working for several years. It is believed the firm will start shipping ware on about December 1, and work-



The new Model C. M. is equipped with a combination conveyor which enables operator to change his discharge from pit to bank delivery, alternating as desired.

A story from Ohio

An Ohio Tile manufacturer wanted to dig his clay by machine instead of by hand labor.

But his pit was too soft a great part of the year to use a heavy type digger on traction wheels. The machine he wanted should be low in first cost. It should be low in operative and maintenance costs. And it must give a good mix.

A Buckeye Traction Digger mounted on rails up on the bank was installed. This was several years ago. Now the manufacturer writes that "the excellent preparation and thorough mixture it gives the clay more than saves enough power in the clay machinery to make up for all the power the digger requires. Oil and grease are extremely small items. The repair bill is also very small." And he concludes with the pithy remark that "the satisfaction of getting rid of hand labor *means much.*"

This same satisfaction with the Buckeye Digger has been experienced by different plant owners in various parts of the country. They all are enthusiastic about the unusual performance of this digger.

Our data on "Digging Clay for Profit" is mighty valuable to have. Ask for it.

Buckeye Traction Ditcher Co.
Findlay, Ohio

BUCKEYE

Traction Digger



Running out doors— every day—for 28 years

That's the service record of this 12-inch double **"Camel Hair"** belt. Originally developing 75 horsepower, as the plant grew the belt bore an increasing load without faltering, until it was transmitting 130 horsepower when it was finally replaced—*still in good condition*—by another **"Camel Hair"** belt, wider because more power was needed.

Summer sun and rain, winter sleet and snow, caused no interruption to its constant efficiency despite the lack of protection. From what other belting could you knock off icicles, shovel off a night's fall of snow, and then have it run as efficiently as though it had always been carefully cared for, and even deliver more power than it was planned to carry?

But the durability and high power-transmitting qualities of **"Camel Hair"** belting are well known all over the world. Its performance under these unusual and severe conditions is only an example of the economy in the *right belt for the particular drive*. In the Rossendale-Reddaway line of fabric belts for every service, the right belt for the particular drive is only a matter of proper selection. They all have the high quality of material and workmanship which distinguish belts made by

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SOLE MAKERS OF



**The Rossendale Reddaway
Belting & Hose Co.**

General Offices and Factory:
Newark, New Jersey

Export Department, 26 Cortlandt Street, New York City

2010-R

ing forces are now being engaged. The line of yellow ware is to be greatly increased by the addition of a number of special items.

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George Stevenson, for the past nineteen years with the Homer Laughlin China Co., at Newell, W. Va., and since the establishment of the plant in Newell, assistant superintendent of plant No. 4, has severed his relations with the firm, to devote his entire time to business of the Davidson & Stevenson Porcelain Co., in East Liverpool, Ohio. Mr. Stevenson began his service with the Laughlin company at the Laughlin plant No. 3, where he was a foreman. When the Newell plant was started he was promoted to assistant superintendent of that plant.

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The four kiln flue and tile plant at Rogers, in the central part of Columbiana County and north of East Liverpool, Ohio, is to be placed in operation at once by Walter G. Rogers, whose offices are in the Wabash Building at Pittsburgh, Pa. The plant which was first operated by the late John Hall of East Liverpool, has been idle since the start of the war. It is equipped with machinery for the making of sewer pipe, flue lining and flue tile. There is a large volume of clay available in the vicinity of the plant which is also controlled by Mr. Rogers.

✱ ✱ ✱

The Van Pottery Co. has been incorporated at Trenton, N. J., to manufacture pottery and earthen products. Its capital is \$125,000.

Members of English Ceramic Society to Visit America

The English Ceramic Society, thru its secretary, J. W. Mellor, has advised its members in this country that a delegation from its organization is planning to visit America during the coming summer. The society has postponed its autumn meeting of the present year, which was scheduled to be held at Stoke-On-Trent, until the end of April, 1920; this will cancel the spring meeting, as arranged to be called in London in 1920, and the autumn meeting of this year (1920) will be held in the United States. The committee in charge has arranged the following tentative itinerary for its visit to this country, and it is possible that some minor alterations may be made as the final plans mature:

July 23—Friday, leave Liverpool.

July 30—Arrive New York and remain there until Monday, August 2.

Aug. 2—Monday, to Trenton, N. J.; visit potteries in the morning, sight-seeing in the afternoon. In the evening there will be a discussion with the local section of the American Ceramic Society.

Aug. 3—Tuesday, to Washington, and visit the Bureau of Standards.

Aug. 4—Wednesday, to Pittsburgh, meeting with the refractory material organization and other ceramic interests.

Aug. 5—Thursday, visit factories near Pittsburgh during the day. In the evening, hold meeting with the local section of the American Ceramic Society.

Aug. 6—Columbus, Ohio.

Aug. 7—Saturday, visit local plants in the morning and the State University in the afternoon.

Aug. 9—Chicago.

Aug. 10—Visit local plants.

Aug. 11—To Detroit. Visit local works.

Aug. 12—To Cleveland, and spend the day in visiting local plants.

Aug. 13—To Niagara Falls.

Aug. 14—Leave Niagara Falls for New York City and "Home Sweet Home."

Architectural Hollow Tile Competition

The Los Angeles (Cal.) Pressed Brick Co. will direct a competition under the auspices of the American Institute of Architects, which will be open to all architects, designers and draftsmen in California and Arizona.

The problem is to design a one-story house, exterior walls of which are to be of eight-inch hollow tile and roof of which is to be of clay tile. The actual cost complete is limited to \$5,000.

Eight prizes have been offered, as follows:

1st prize	\$300 cash
2nd prize	150 cash
3rd prize	100 cash
4th prize	50 cash

The 5th, 6th, 7th, and 8th, prizes will in the form of First, Second, Third and Fourth Honorable Mention.

Garrett Van Pelt, Jr., Pasadena; John C. Austin, Los Angeles, and D. C. Allison, Los Angeles, have been appointed as judges.

The contest closes Monday, December 1, 1919, at five p. m. Further details and instructions may be had upon application to the Los Angeles Pressed Brick Co., Frost Building, Los Angeles, Cal.

Major Matt L. King Answers Final Summons

Major Mathew L. King, well known among the Iowa clay producers, died October 23 in the government hospital at Fort Sheridan, Ills. Altho during the past two years Major King had often risked his life in flying feats, his death was from natural causes.

For two years and a half previous to September, 1917, Major King was secretary of the Permanent Buildings Society, with headquarters in Des Moines, and his official duties kept him in constant touch with the clay manufacturers of the state. When America entered the war he felt the call of his country and early in September 1917, volunteered for the air service and was shortly afterwards commissioned captain. Unlike many of the men who entered military service from business life, Major King elected to remain in the regular army and only a few days before his death had received his majority commission. Just previous to his entering the hospital at Fort Sheridan Major King was engaged in making a survey with a view of establishment by the government of aerial mail routes.

Major King was forty-three years old and is survived by his wife and two daughters. Previous to his connection with the Permanent Buildings Society he was associated with the experiment department of the Iowa State College, at Ames.

Major King's burial was made at Des Moines, October 25, with full military honors and his body was laid to rest in Glendale cemetery.



At Home Anyplace

In "Podunk" or Paducah, Seattle or Siam, or wherever there's a pumping job to be done in a hurry—slapped to a beam, hung to a wall, rigged wherever you please, a PULSOMETER is "at home" and ready to work—it is built not to need a foundation and doesn't.

A PULSOMETER is made minus the things most pumps need. Pistons, rings, rods, stuffing boxes, cams, shafts, in fact, all sliding parts are eliminated—it operates without friction and consequently without lubrication—a PULSOMETER has no more use for oil than a "Fijian has for furs."

You don't need to keep "your eye on" a PULSOMETER—it's built to take care of itself, and does. Drop the intake into the water, turn on the steam (that's all) and a PULSOMETER pumps without watching or attention as long as there's anything to be pumped— isn't stumped by sand, gravel, mud or grit—it raises water 40% solid matter.

Put a PULSOMETER "on the job" and keep water off. It's a worker that knows no "union," that has no hours.

A new catalog tells about this 154,000 performance proven pump completely and in an interesting manner—it awaits your name and address.

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Executive Offices: 224 W. 42nd St., New York City

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Liberty Steel Products Co., McCormick Building	CHICAGO	F. H. Hopkins Company.....	MONTREAL
Beckwith Machinery Co., 1227 West 9th St.....	CLEVELAND	Kern-Hunter, Inc., 208 Wells St.....	MILWAUKEE
Queen City Supply Company, S. W. Cor. Elm and Pearl Sts.....	CINCINNATI	Wm. H. Ziegler, 440 Temple Court.....	MINNEAPOLIS
H. A. Paine, 119 Main St.....	HOUSTON, TEX.	Berow Machinery Co., 220 West 42nd St.....	NEW YORK CITY
J. L. Welborn.....	HATTIESBURG, MISS.	Harron, Richard & McCone, 139 Townsend St.....	SAN FRANCISCO
Miller Supply Co.....	HUNTINGTON, W. VA.	Shippers Commercial Corp'n, L. C. Smith Bldg.....	SEATTLE
Edelen & Co., 235 Commercial Trust Bldg.....	PHILADELPHIA	Kelly Powell Limited,	WINNIPEG, CANADA



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The necessity of Uninterrupted Transportation throughout the winter months prompted Kissel to originate the ALL-YEAR Cab that protects truck drivers, increases their efficiency and keeps trucks operating the year 'round.

5 different sized models from the ¾ ton to the Goliath. Our nearest Kissel dealer is thoroughly competent to make a survey of your requirements. Make an appointment with him. This incurs no obligation.

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**KISSEL
TRUCKS**
5 CAPACITY MODELS

New Storage Battery Jar, Practically Unbreakable

The storage battery in the mind of the average layman is apt to mean a "black box of mystery" mounted on his automobile to start his motor and furnish current for his lights. He is very apt to regard the battery as being delicate in construction, whereas the storage battery actually is today playing a very important part in the most strenuous service. As an instance of this the mine locomotive may be cited.

This mine service is usually severe and the battery must be exceptionally rugged to withstand the bangs and bumps. The tracks as a rule are bad and frequent head-on collisions are not unusual. The battery has in this service, however, made a wonderful record. In the past there has been but one serious objection, the battery's jars would some times crack under an unusually severe jolt.

The Electric Storage Battery Co., manufacturers of the "Ironclad-Exide" battery, realizing this, has for some time been experimenting to develop an unbreakable jar. What is known as the "Giant" jar is the result.

The "Giant" jar of the "Ironclad-Exide" battery, is made of a semi-flexible compound, exceptionally tough and strong. Exhaustive tests have proved that these "Giant" jars will stand a pressure of 2,000 pounds at their weakest point, whereas the old type jar broke at less than 1,000 pounds; that the "Giant" jar will support at its weakest point the



Two "Iron-Exide" Giant Jars Supporting Eight Husky Men

weight of four husky men, whereas the old jar would not support the weight of one man; that an electrical test of 30,000 volts does not puncture the "Giant" jar.

Moreover thousands of these jars have in actual service demonstrated their ability to withstand the hardest and most severe service. The "Giant" jar is now the standard for the "Ironclad-Exide" battery that is so very extensively used for mine locomotives, industrial trucks and tractors.



Portable Belt Conveyor

One of the most important pieces of equipment now being used on many clay-products plants is the Portable Belt Conveyor. This has been a wonderful boon to clay plant managers, particularly during the past year, because it helps in such a practical way to overcome the shortage and high prices of common labor.

The pioneer concern in the development of this kind of conveyor for clay plants is Barber-Greene Co., of Aurora, Ill., and clay plant managers generally, are now quite well acquainted with the company and its equipment.

Barber-Greene Co. has just issued catalog No. 3, which brings their equipment right up to date, and by means of illustrations and figures, they show the direct application of their Portable Belt Conveyors. These are being used in clay plants for unloading coal from cars, and also for delivering the clay from the storage pile to the machine room. This catalog should be in the hands of every clay plant manager in the country, and copy will be sent to any reader of *Brick and Clay Record* on request without obligation.

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

A Danger Threatens; Sound the Alarm!

LAWLESSNESS—absolute and utter disregard of law and order—is abroad in the land.

Nothing like it, so wide-spread, so audacious or so vicious, has ever been seen in the history of this nation. Not even the days preceding, during and immediately following the Civil War, with its unspeakable internecine strife can compare with the present situation. Then it was a political, and the North said, a moral issue that was at stake. The country was dangerously divided on the question of slavery. It was practically a solid North against a solid South. But today, enemies of society both in the North and the South are slowly but surely eating away like a consuming cancerous growth at the very vitals of America.

A SUBJECT OF FIRST IMPORTANCE

The business of manufacturing and distributing clay products depends upon the strict maintenance of law and order. The complete stagnation of business in Russia is a simple and forceful illustration of that fact. Therefore, while this space could profitably be devoted to a discussion of the trend of prices, the possibility for increased production or the handling of labor, it is useless to talk about these things unless we can sell and make our product in a land of peace, prosperity and plenty.

The war wakened the nation to the presence of desperate enemies in its midst. These men differed with the government in the matter of its entrance into and participation in the war over in Europe. Now, it is the inalienable right of every citizen to hold and to express his private opinion on any subject of common interest, but when with one hand he lays hold of a fire-brand and with the other grasps a bomb and proceeds to express his displea-

sure and dissatisfaction by burning property and killing the people, he forfeits all rights of citizenship, if he ever possessed any, and becomes an enemy and an anarchist.

But that is not all. The armistice was signed more than a year ago. The cannon "went cold," the battle and bloodshed ceased and the noise of strife died in the distance. The world seemingly was at peace again.

THE STORM BREAKS

A sound is heard. It is like the ominous howling of an approaching hurricane on the Kansas prairies. Quick as lightning and crushing as a mighty crash of thunder, the storm of lawlessness breaks upon the heads of a war-weary but victorious people.

Events in rapid succession tear aside the torn and tattered curtain of civilization, revealing an alarming revolt against the foundations of society. The police strike in Boston, the race riots in Washington—the capital of the country—in Chicago and Omaha, where the mayor escaped a public hanging by the smallest fraction of time, in Arkansas and elsewhere, strikes without number, and last but not least, the new sport of shooting ex-soldiers in a parade on "Armistice Day" in Centralia, Wash., all have contributed to the wildest orgy of lawlessness and anarchy ever witnessed in this country.

The peaceful and law-abiding citizens of America have great cause for rejoicing and congratulation because of the fact that these disorders have been promptly and firmly suppressed. It would indeed have been a national calamity if this had not been the case. One thing, however, must be apparent to everyone who reads these lines, and that is, nothing but the strictest vigilance and the swiftest justice has been able to maintain the government, and force respect for its laws.

A DANGEROUS BUSINESS

Every man who presumes to overthrow the government, is shaking his fist in the face of

God himself, for it is written: "Let every soul be subject unto the higher powers. For there is no power but of God: the powers that be are ordained of God. Whosoever therefore resisteth the power resisteth the ordinance of God: and they that resist shall receive to themselves damnation."

Perhaps in the light of this information we can better understand the recent revelation of the aims of the Union of Russian Workers (in America) who, with the government overthrown and everything wiped from the earth that is a reminder of the right of private ownership of property, are looking forward "to the magnificent beautiful form of a man **without a God**, without a master and free of authority."

WHAT IS NEEDED

Loose thinking and still more careless living have permitted this menace to exist almost unmolested, in one form or another, both mild and extreme, in the very heart of America entirely too long. What we need is an allopathic dose of fundamentals—bed rock facts and "brass tack" information as to who's who in law and order.

If "parlor bolshevists" would realize and remember these facts, there would be a great falling off in "pink tea revolutions" and a more wholesome respect for a government that has functioned for its citizens like no other government this world has ever seen—a government of the people, by the people and for the people. In other words, a government that not only guarantees life, liberty and the pursuit of happiness but which makes it possible, thru the maintenance of law and order, to carry on business and commerce, to grow and develop industrially and economically.

A TRIBUTE TO AMERICA

In talking with a well known engineer in the clay products manufacturing business the other day about these disturbing disorders, he said that they did not trouble him because he had great confidence in the good sense and calm judgment of the American people to quickly punish flagrant disorder and to maintain respect for the law. Whatever else one

might say about this opinion, it is a great tribute to a government that was born out of the abuse of rule on the part of a Prussian king.

Those, who would by force and violence overthrow this government, abolish the right of private ownership of property, set up communism and proceed to nationalize industry, should remember that if they pull down the house that has so carefully been builded thru nearly a century and a half of painstaking toil, what reason have they for even daring to hope that the house which they build will be certain or safe from the same destructive power that might set up a socialistic order of things.

IN THE WORDS OF THE EMANCIPATOR

No more fitting close to these few sincere and earnest words could be found than those of America's most beloved statesman, Abraham Lincoln, who said:

"Let reverence of the laws be breathed by every American mother to the lisping babe that prattles on her lap; let it be taught in schools, in seminaries, and in colleges; let it be written in primers, spelling-books, and in almanacs; let it be preached from the pulpit, proclaimed in legislative halls and enforced in courts of justice. And, in short, let it become the political religion of the nation; and let the old and the young, the rich and the poor, the grave and the gay of all sexes and tongues and colors and conditions, sacrifice unceasingly upon its altars."

CLAY PLANT CONSTRUCTION AND OPERATION

is our most recent production. It ought to have a place as a text book in every university or college that maintains a course in ceramic engineering. It is written by A. F. Greaves-Walker, a ceramic engineer with a wealth of practical experience in the business.

The price of this handsomely bound volume is \$4.00, postpaid.

Have you secured your copy, Mr. Clay Plant Owner?

RECENT TOUR *thru* SOUTH REVEALS MUCH ACTIVITY

Clay Plants Everywhere Making Improvements to Increase Production—Many Join Common Brick Manufacturers' Association—Problems Much the Same As in North and East

WHEN THE SOUTH is mentioned to the average man living north of the Mason and Dixon Line, he immediately thinks of a slow moving, partially developed country covered with cotton fields and lazy negroes—a land where the climatic conditions are conducive to lethargy and where the word “pep” or the phrase “short and snappy” is an unknown quantity. One would hardly expect to find modern and efficient clay plants existing in the territory beset with such environment. Neither would you look for a large number of progressive brick manufacturers in the South. However, a visit to this section would soon convince one of the necessity of revising his opinion if he ever entertained any such thought as outlined above.

By accompanying Ralph P. Stoddard, secretary-manager of the Common Brick Manufacturers' Association of America, in his tour of a number of prominent brick centers in the South, a member of the editorial staff of *Brick and Clay Record* had a splendid opportunity to learn the actual conditions in the section represented by Oklahoma, Arkansas, Tennessee and Kentucky. Every indication pointed to a great and rapid development in all of the states visited. Hotels were everywhere over-taxed, it being almost impossible to obtain a room unless a request for reservation had previously been sent in. Trains were crowded and Pullman car reservations similar to hotel accommodations, were hard to get unless early requested. Business was very good everywhere and the demand for most products exceeded the supply. Difficulty in obtaining cars in which to ship manufactured goods or raw material is just as much a disturbing factor in the South as it is in the northern states. The

The main purpose of Mr. Stoddard's trip was to talk to clay products manufacturers who made any common brick at all for the purpose of making known to them the object and plans of the Common Brick Manufacturers' Association of America. The splendid publicity and promotional work that has been undertaken by this Association is too well known by the readers of this journal to be reviewed



View of Row of Round Down-Draft Kilns at the Muskogee (Okla.) Vitrified Brick Co.

here at this time. These plans, together with the advertising campaign under contemplation, were discussed before groups of brick manufacturers who came from all points of the state to the place of meeting where Mr. Stoddard addressed the assembly.

PLANS GET A WARM RECEPTION

It seems that in every section Mr. Stoddard visited, the plans laid before the manufacturers were exactly in accordance with their own ideas of what should be done and which they themselves sought to carry out. The spirit with which the proposition of the Common Brick Manufacturers' Association of America was received, was a pleasant revelation and showed the great desire for this very thing which every one felt was needed. The result of this swing thru the South was the acquisition of nearly every manufacturer who attended the meetings as a member and contributor to the advertising fund of the Common Brick Manufacturers' Association.

A brief review of all the meetings held in the different cities and the activities of the associations and clay plants would undoubtedly be of interest here. The first meeting of the trip was held at St. Louis, Mo., where on Friday afternoon, October 24, Mr. Stoddard met fourteen St. Louis brick manufacturers at the office of Walter Pocock, secretary of the St. Louis Brick Manufacturers' Association. It was learned at this meeting that building operations in St. Louis were not reviving as quickly as in most centers but that they had improved greatly and a good year was expected in 1920.



From Left to Right, F. C. Nicholson, President; Hazel Hermes, Clerk; N. Hermes, Superintendent, and Wayne Moore, Sales Manager. All of the Muskogee (Okla.) Vitrified Brick Co.

clay manufacturers are exceptionally progressive and strong state organizations exist, especially in Oklahoma and Texas.

OKLAHOMA HAS STRONG STATE ASSOCIATION

On Monday, October 27, a meeting of the Oklahoma Clay Products' Association was held at the Hotel Severs, Muskogee, Okla. Twelve manufacturers from various parts of the state were present, and a very live meeting was held.



New Down-Draft Kiln Under Construction to Take Care of Increased Production of the Muskogee (Okla.) Vitrified Brick Co.

One of the important topics that came up for discussion was how to meet the present shortage of cars in which it is required to ship brick. Members have been told by freight agents that all available cars were being sent to Arkansas to take care of the immense apple crop produced in that state. One of the members mentioned the fact that an oil company finding itself in dire need of cars, purchased their own and found it entirely profitable for them to do this. It was thought that the brick plants in this state might try the same experiment, altho it was questioned whether or not it would be as applicable in this case as in that of the oil company because oil cars can be used for no other purpose than conveying oil while clay products cars can be subjected to general haulage use.

The matter of designing cars that could be used for no other purpose than that of carrying clay products was then discussed, and the matter finally placed in the hands of a committee to investigate the possibilities and advisability of purchasing or constructing special cars for hauling clay ware, and to be owned by the Association.

Another important point taken up at this meeting was the relationship with the brick-layers union, which had been somewhat strained because of the employment of a non-union "roust-a-bout" on the yards of brick factories to repair kilns and do odd work about the plants. The brick-



Snapshot of Part of Large Fifty-Four Chamber Coal Fired Continuous Tunnel Kiln at Plant of Wm. Bush & Co., Nashville, Tenn.

layers' union desired to fine one of the concerns for doing this altho union bricklayers admitted they would not care to do this kind of work. It was decided to explain to the

union that the nature of the work required on the brick plant was entirely different from ordinary brick laying and should not be classed with masonry construction.

PLANNED EXTENSIVE ADVERTISING CAMPAIGN

The subject of carrying on a large advertising campaign was another point taken into consideration. A prominent advertising agency in Oklahoma City had mapped out a campaign for the promotion of brick using newspaper space that would cost the manufacturers in the neighborhood of \$30,000. Later this agency figured \$15,000 as the minimum amount which would be necessary to carry on a successful campaign. The Oklahoma Clay Products' Association was about to accept this proposition but turned it down in favor of the national publicity work which will be carried on thru the Common Brick Manufacturers' Association of America, and which will be very much more extensive for a considerable less amount of money. By contributing towards the above campaign the clay products manufacturers of Oklahoma will be pro-rated only about \$6,000 a year and will obtain in return much more service. Such a large detailed and extensive campaign as is planned by the national association would involve a cost that would be prohibitive to an individual, or small group of manufacturers as is represented by a state organization. However, because of the large number of manufacturers contributing to the campaign to be carried on



Interior View of One of the Chambers of the Continuous Kiln Shown in Another Picture of This Kiln.

by the national association, the work can be conducted on a larger scale, with better talent and with much less cost.

ACTIVITY OF CLAY PLANT

On the outskirts of the city is located the plant of the Muskogee Vitrified Brick Co., of which Frank C. Nicholson is president and N. Hermes is superintendent. It is a typical plant using a steam shovel to take its somewhat carbonaceous shale from a twenty foot bank. The overburden, which amounts to only about three feet, is also used. A well driller operated by one man is used to drill holes which are filled with powder and blasted. Three men work on the shovel and one man takes care of the movement of the clay cars. One car is filled with shale and pulled by a horse to a point about 150 feet away, where it is connected to a wire rope and pulled up an incline by means of a drum hoist. Another car is being filled with clay during this interval. Thus, only two cars are used alternately for hauling the clay from the clay hole to the bins which feed the three dry pans.

Both common and rough texture face brick are manufactured on a stiff mud brick machine. The brick are dried in a waste heat dryer and burned in six up-draft kilns fired with gas and nine round down-draft kilns fired with coal. Three new kilns of the type designed by N. Hermes and recently described in *Brick and Clay Record*, are now under

construction. It is planned to dismantle the up-draft kilns and build fifteen round down-draft kilns of the above design in their stead. This will give the plant a daily capacity of seventy-five thousand face brick.

Arkansas brick manufacturers are experiencing a very good demand for brick and expect it to continue. The \$100,000,000 bond issue for the building of good roads which was passed by the state recently, is looked upon as being very favorable to the clay industry. These roads it is believed will aid a great deal in the development of the state and should prove of direct benefit to the clay products industry. The Arkansas Brick & Tile Co., at Little Rock, of which W. W. Dickinson is president, is making many improvements on its plant, including the erection of a large new kiln shed which will protect the brick set in the scove kilns. The method of burning is much the same as that in vogue among Chicago brickmakers. The purpose of making these changes is to prepare the plant to take care of the big demand for brick which is expected to materialize during the next three or four years.

INSTALLING STIFF-MUD BRICK MACHINERY

Western Tennessee brickmakers have experienced a very good season and the activity of the plants in making improvements and increasing capacity indicates that all look forward to a good demand next year, and they are getting their factories in shape to meet the requirements. The meeting of Western Tennessee brick men was held in the offices of the Fischer, Lime & Cement Co., large and progressive building supply dealers in Memphis. This firm has a wonderful face brick display room which will be described in a near future issue of this journal. Among the activities of this concern is that of the Memphis Brick Supply Co., manufacturers of common brick. At the time of the meeting on Wednesday, October 29, this plant was trying out the new stiff-mud brick outfit that had just been installed. Previous to this time only soft-mud and dry-press brick were made at this factory. However, after making experiments on the clay, it was decided that stiff-mud brick could be made,—a decision which led to the installation of the above mentioned equipment. It is expected to construct an artificial dryer and new kilns soon.

On Thursday, October 30, Eastern Tennessee brickmakers met at the offices of T. L. Herbert & Sons, in Nashville. This firm has a very unusual manner of displaying face brick in its office, the rear wall being made to look like the exterior side of a bungalow. The idea is very novel and will be described in these columns in the very near future. All of the manufacturers present reported a very good demand for their product and nearly each one had some improvement under contemplation whereby they would increase their production.

The plant of the William G. Bush & Co., which is now in the hands of the third generation of a family, and is operated by the Herberts, is one of the largest establishments of its kind in the South. Both dry-press and stiff-mud brick are manufactured at this factory, some of which are burned in rectangular kilns and the remainder in continuous kilns. The plant has two sixteen-chamber coal fired continuous kilns and one immense fifty-four chamber coal fired continuous kiln. The daily capacity of this plant includes one hundred thousand common brick, twenty thousand dry press and eight thousand rough texture brick.

MANY DIFFERENT SHADES OF BRICK MADE

A large variety of beautiful shades of face brick are made by this concern, the colors varying from light buffs thru the various buff shades, and orange, brown, purples, reds, and dark shades of reds and browns. The clays for the buff

burning brick are obtained in the western part of the state and are shipped into the plant.

Several brick men braved the rain and stormy weather in Louisville on Friday, October 31, in order to hear Mr. Stoddard tell of the plans laid down by the Common Brick Manufacturers' Association. Every one was very enthusiastic over the work that was being carried on and which is under contemplation by the national association, and were very eager to join in and help. Building in Louisville it seems has not picked up as fast as in a good many large cities, but every indication points to a good business in 1920.

Cincinnati manufacturers were highly enthusiastic over the possibilities of the plans outlined to them by Mr. Stoddard on Monday, November 3. Most of the plants in this city use the soft-mud process of manufacturing brick. The Queen City Shale Brick Co., which is located in this city, is planning extensive improvements on its plants. The new work includes the erection of kilns and considerable thought is being given to the construction of a car tunnel kiln for burning common brick.

Columbus, Ohio, brick men are also preparing for a big year in 1920. As is indicated by the preparations being made by at least one company to increase its output. The Franklin Brick & Tile Co., is planning for an increase in production, which includes the construction of ten more periodic kilns and possibly a continuous kiln.

* * *

Railroad Accommodations for Coming Annual Conventions at French Lick Springs, Ind.

Secretary Hollowell, of the American Face Brick Association has made the following announcement in regard to transportation arrangements for the convenience of those located east of the Indiana state line who want to attend the meetings at French Lick Springs next month:

"In the past, face brick manufacturers and dealers attending the annual meetings of the American Face Brick Association and the Face Brick Dealers' Association at French Lick, Ind., have found the route via Cincinnati, B. & O. SW., Mitchell, Indiana, and Monon Route most comfortable and convenient.

"With this in view, we have arranged with the Monon Route to hold their train No. 11, scheduled to leave Mitchell at 12:25 p. m., until 1:00 p. m., on December 1 and 2, which should insure connection with B. & O. SW. No. 1, leaving Cincinnati at 8:50 a. m. B. & O. SW. No. 1 is a thru Pullman train, with infrequent stops and the change at Mitchell is made with a minimum of inconvenience.

"Passengers from the East can arrange to reach Cincinnati early, take a walk to a nearby restaurant, get breakfast and board B. & O. SW. No. 1 without haste."

Furthermore, in connection with the coming conventions, the Brick Club of the Cincinnati Chamber of Commerce has arranged for special sleeping cars, Cincinnati to French Lick Springs, leaving Cincinnati 9:00 p. m., December 1, for the convenience of those who prefer the night trip, or would rather spend December 1 in Cincinnati. Applications for sleeper reservations should be made to the Brick Club of the Cincinnati Chamber of Commerce.

* * *

Announcing Change of Firm Name

The American Silo & Material Co., manufacturers of vitrified hollow clay ware of all kinds, with offices at 425-427 Lane Building, Davenport, Iowa, announce that they have changed their firm name to the Berwald Silo Co.

NEW YORK MAY GO BEGGING *for* COMMON BRICK

Hudson River Brick Makers Protract Season Far Beyond Usual End to Help Meet Shortage Which May Raise Cost of Brick Laid in Wall About Ten Per Cent.

HUDSON RIVER brick manufacturers practically hold the key to winter building construction activity, says the Dow Service Daily Building Reports of November 10.

Without common brick the contractor and architect has recourse to concrete in some types of construction enterprises. But there the inquirer for material is confronted by conditions created by the steel and coal strikes, railroad embargoes, harbor congestion and other factors that do not offer him much encouragement. Concrete means reinforcement material and bars advanced \$5 a ton or 3 cents base, Pittsburgh, while cement prices are generally reported to be in upward tendency, probably effective in this market around the first of the year. As a matter of fact conditions in that department warrant a price advance even now.

The alternative of using concrete involves the use of lumber for forms and there is a new price schedule showing higher levels than even those now ruling that is promised for this month. Price advances in lumber affects window sash, doors, rafters, flooring, roofing, etc. Alternative of these commodities rest in the metal market which already shows signs of stiffening for a period sufficient to cover clearance of back log orders and the rapidly increasing demand for building purposes.

The only commodity upon which an active construction market for New York City rests, therefore, is brick—common brick, that only a few years ago sold in this market at \$6 a thousand, wholesale, dock, New York or about \$25 a thousand, laid in a wall. Even at \$18 a thousand, dock, and \$45 a thousand laid in a wall, the market is so famished today that a sale was reported in Staten Island at \$20 a thousand, wholesale, with only one cargo available here on November 8.

MUST PRODUCE ALL BRICK POSSIBLE NOW

One fact stood out prominently: that no more brick arrived at the West 52nd Street wholesale docks with the market at \$18 than arrived when the market was at \$14, \$15, or \$16. Leading brick manufacturers met up the river on Friday to discuss the problem as it was beginning to present itself to them. It was shown that the majority of the manufacturers who can do so, believed that they were best conserving the interests of the New York consumers by utilizing all the premium-paid men they can still retain at the yards in the manufacture of brick rather than in loading what brick they have for shipment into this market. Brick can even be shipped by rail in winter, it was argued, but they cannot be made on the open yard after winter sets in. The consensus of the meeting seemed to be that the right thing to do was to produce all the brick possible while there was a chance to do so. Any day might see the end of the Hudson brick-making season, already protracted long beyond the farthest brick-making day the

Hudson annals have yet shown, according to manufacturers.

Under this plan, it was pointed out, if weather conditions favored, it would be possible to make brick for some time yet, and then, just before navigation closed, large flotillas of brick barges could be rushed down the river to be "covered" at local docks, pending purchase and thus, perhaps to break the high prices fostered by present dearth of this important building commodity. There are some purchasers in New York who have been conspicuously out of the market for the last month, in anticipation of just this contingency so as to offset the advantage that Haverstraw manufacturers might have by reason of their plants being usually accessible to New York all winter, if demand proved sufficiently great to require the extra exertion.

The Hudson River district, according to the most authentic count will close the year with barely 300,000,000 common brick left from a season that produced only a little more than half the 1,200,000,000 of a normal year. This may be further curtailed if the coal strike is long continued as soft coal is solely depended upon now a-days for burning.

BIGGEST DEMAND—SMALLEST SUPPLY

The result of this low quantity production is that the entire New York building program for this winter is likely to rest in the hands of a few Haverstraw district brick manufacturers who will have the responsibility of meeting the biggest winter demand for common brick the district has known in recent years with the smallest quantity of basic building materials the Hudson River brick industry has ever recorded. It is unlikely that anything like the supply needed will be brought here by rail. Such added expense would put the price of this commodity under existing conditions around \$50 a thousand laid in a wall. Such a price would be prohibitive even for the biggest building interest.

There is some relief in sight, however. While the Hudson River brick interests have been laboring to meet an unprecedented condition, science, and a nationally known engineering company, have erected in Brooklyn a factory for the production of a substitute building commodity that its originators say can be produced in tremendous volume and meets all the tests of an ordinary common brick. There soon will be sufficient on hand to help meet present market conditions, the manufacturers say.

In the meantime the building construction movement is gaining. Glass interests here are figuring an increasing volume of big building work altho they are frank in saying they do not know what is going to happen when the building demand begins to compete with the present automobile demand for plate glass. The mills cannot produce more, the jobbers' stocks are depleted as soon as they are restocked—when they can be restocked at all—and discounts

have already begun to shrink in this commodity. There is a fair quantity of cost-plus construction work being awarded, nearly all for work to proceed at once, but subcontractors are "picky." The lure of the big job has given place to the job where time is not the first factor. Conditions of supply of materials and temper of labor is not

conductive to speedy construction work today and the result of this tendency probably will be that anything like general relief from the housing shortage cannot be expected next year. The extreme conservatives among the building interests say that under present conditions there can be no hope for a change until the fall of 1921.



HOW ONE PLANT SUCCEEDED *in* HOLDING MEN

IT IS NOT VERY OFTEN that you run across a plant which is able to state that it has not been affected as seriously by labor shortage as were other factories. However, this has been the case with the Bradford (Pa.) Pressed Brick Co., manufacturers of a grade of face brick which is noted for its unusually fine red color. The means chosen by the above company to hold its help is not entirely new and the suggestion might possibly be adopted to good advantage on a large number of clay plants, thruout the country.

Early last spring a band was organized which was made up entirely of employes of the plant. This band has been in demand almost constantly in Bradford and neighboring cities, its popularity making each member very proud of the organization and tending to hold them in harness.

Another organization which has been of great aid in holding the men on the plant is the baseball team which was assembled last spring. A new ball park was laid out near the plant equipped with lockers and shower baths for the players. Every encouragement and convenience was given to this team which proved to be one of the fastest amateur baseball teams in the state.

The Bradford Pressed Brick Co. writes that "the orders for face brick have been coming in so heavily that we will have a clean shed within a few days. We recently closed up an order for the General Motors Co., Detroit, Mich., for their new buildings which will take approximately 1,200,000 first quality impervious smooth face brick."

Some extensive improvements are now in the process of installation at this plant. The excavation has just been started for a factory power plant which will generate 700 h. p. for the No. 1 and No. 2 plants of the company. This will require an expenditure of approximately \$70,000 and the company expects to add an additional 300 h. p. for a new plant to be constructed next year. All of the plants are being changed over to individual motor drives. Hereafter all machines will be directly connected with electric

motors by means of chain drives which will give a greater efficiency than could be obtained from the old line shaft drives which have heretofore been employed.

The expenditure for the above improvements represents the first out of a fund of \$500,000 which will be used for the general improvement of the various plants belonging to the Bradford Pressed Brick Co. during the next few years, and which includes the housing of employes, and other features.



Latest Coal Figures

Secretary Lane furnishes the United States Bulletin the latest coal production figures reported to him by the Geological Survey. In the week ended October 25 the bituminous mines of the country shipped 13,177,500 tons or a daily output of 2,136,250 tons. These preliminary figures indicate that the last full week before the strike was probably the best on record, not even excepting the high mark set in July, 1918. Indeed such a weekly output if continued for a full year would give our annual production of 685,000,000 tons as compared with 576,000,000 actually mined in 1918.

This fortunate addition of 13,000,000 tons to the coal supply fulfills the promise of an adequate car supply made by the Railroad Administration in view of the fuel crisis. Again the coal industry has shown what it can do with a good supply of cars and the mine workers doing their part of the world's work.



Refractories Manufacturers Meet

A general meeting of the Refractories Manufacturers' Association was held at the William Penn Hotel, Pittsburgh, on Thursday and Friday, November 13th and 14th.



The Splendid Band of the Bradford (Pa.) Pressed Brick Co.'s Employes.



Another Noteworthy Activity of the Employes of the Same Brick Company.

RAILROADS MAY MEET BRICK INTERESTS HALF WAY

The Prospect of Arbitration or Compromise Is Very Definite as Respects the Inequalities in Brick and Tile Rates That Now Operate to Place Certain Manufacturers at a Disadvantage as Compared With Competitors in the Same or Adjacent Territory—It Is Hoped the Carload Minimum Issue, the Problem of Brick and Tile Classification, Discrimination in Brick Rates, Differentials, Etc., Will Be Disposed of by Mutual Agreement

By Waldon Fawcett

A WELCOME NEW TURN OF AFFAIRS, this past fortnight, holds out promise that the railroads of the country may meet the brick interests half way, or at least a part of the way, in adjustment of the freight rate burdens that have been oppressing the brick and tile industries. The prospect of arbitration or compromise or amicable agreement, or whatever you choose to call it, is very definite as respects the discriminations or inequalities in brick and tile rates that now operate to place certain manufacturers at a tremendous disadvantage as compared with competitors in the same or adjacent territory. Whether the "get together" spirit will extend to the other horn of the dilemma, the high level of brick and tile rates as compared with rates on other building materials, remains to be seen. In any event, half a loaf is better than none.

The move in behalf of an understanding, in contrast to a fighting attitude all along the line, was initiated when Francis B. James as attorney for the National Paving Brick Manufacturers' Association, The American Face Brick Association and the Hollow Building Tile Association recently had an extended conference with Judge Fletcher, assistant general counsel of the United States Railroad Administration. The purpose of the consultation was to ascertain whether a common ground of agreement could not be reached on some of the points at issue in the complaint of the three trade associations now pending before the Interstate Commerce Commission and scheduled for hearing this autumn.

As *Brick and Clay Record* readers will readily realize, the contest that is impending means a fight before the "supreme court of the railroads" between the railroad management on the one hand and the triple alliance of the brick and tile trade on the other, just as the average case in court is a clash between litigants. It became evident long ago that the railroads would not give deserved relief to the brick and tile industry until forced to and even with the fight in behalf of the trade carried to the most powerful source of relief it was too much to expect that the railroads would voluntarily grant all that was asked of them. However, there has been growing in recent weeks a feeling that there are certain points at issue regarding which there is not much difference of opinion as between the opposing parties. In other words, the carriers concede that in certain matters the brick and tile shippers are entitled to relief or an equalization of burdens. With no real disposition to argue cer-

tain aspects of the situation it was patent that it would be for the best interests of all concerned if agreements could be reached on these non-controversial points before the case was called up before the Interstate Commerce Commission. Cutting away non-essentials of the debate would simplify the proceedings before the Commerce Commission and save time all around. To try then what the spirit of compromise or negotiation might accomplish on the eve of battle was the object of the conference above mentioned.

OUTLOOK ROSY FOR A REFORM IN RATES

As a result of the exchange of views the outlook is rosy for a narrowing of the contest for a reform in railroad rates. However, time will be required to operate the machinery of negotiation. The U. S. Railroad Administration has a general brick committee made up from the brick committees of the three regional districts into which the railroad map is apportioned and this body, with its advisory group of lawyers must establish contact with the brick and tile interests. There is, however, no need for haste, because the representatives of the brick and tile trade associations have not yet completely assembled the mass of data with which they desire to support their contentions, first in the negotiations with the railroad representatives and later before the Interstate Commerce Commission. However, the present outlook is that sometime around December 10 we will find railroad representatives and spokesmen for the organized brick and tile industries gathered around a table at Washington in an effort to clear the atmosphere of grievances over rates with respect to which there is really no quarrel. This conference which it is hoped to bring about before the middle of December will be preceded by a conference of leaders of the brick industry at which the entire situation to date will be canvassed.

As has been indicated, it is too much to hope for that all matters in dispute between the brick and tile shippers and the railroads can be amicably adjusted when the "peace commissioners" put their heads together, even if they meet with the best spirit in the world, because it is a long chance that the railroad interests will voluntarily accept a decrease in their revenue thru the reduction of the rates that brick men hold to be excessive. However, there are several issues which may be disposed of by mutual agreement. One of these is the carload minimum. Another is the problem of

brick and tile classification which involves the disposition of the railroads to give hollow building tile a higher classification than brick. A third issue that promises to yield to conciliation and arbitration is the very important one of discriminations in brick rates, glaring examples of which were detailed in the November 4 issue of *Brick and Clay Record*. The railroad men are, it is understood, willing to confess that undue prejudice and disadvantage is resulting from some of the inequalities of rates of which the industry has been complaining and it is probable that there can be brought about, without depending on pressure from the Interstate Commerce Commission, a readjustment that will seek more even and exact justice. Even with respect to rate levels there is a chance that understandings can be arrived at with respect to differentials, etc.

ALL BRICK RATES ARE EXCESSIVE

Whether the subject be taken up thruout its whole range at the contemplated conferences or whether it remains to be threshed out at the final show-down before the Interstate Commerce Commission it may be stated with confidence that the brick and tile interests are prepared to make a formidable attack upon the present level of brick and tile rates. It will be insisted that all rates on brick are excessive, unjust and unreasonable. Concrete instances of extortion will be called up because the powers that be at Washington seem to want specific examples but the argument will be made that these "horrible examples" of excessive rates only illustrate a condition that is general thruout the country.

Furthermore it will be insisted that in many instances the rates are absolutely prohibitive for the movement of brick and hollow building tile. As examples of these there will be cited the rates from Lewis Run, Pa. to Virginia, West Virginia, North Carolina, South Carolina, Florida, Georgia and Alabama, and the rate from Statesville, North Carolina to Virginia points, for example, from Statesville to Danville, a distance of 122 miles with a rate of \$5.00 per thousand brick and to Norfolk, Suffolk and Newport News of \$6.75 per thousand brick which is equivalent to \$2.30 per ton.

It will be brought out that in the Middle West there are few commodity rates published and that class rates make the movement almost prohibitive. From Coral Ridge, Kentucky, there are no general commodity rates south of the Ohio River and east of the Mississippi and class rates are prohibitive. From the plants in Alabama there are no commodity rates to the smaller towns. From Buffalo, Kansas, they have no thru rates except on the Missouri Pacific. There are no thru rates published to points on connecting lines. Elmendorf, Texas is excluded from Louisiana points on the main line of the Southern Pacific by reason of excessive rates.

Strong evidence is to be mustered via a showing that Pennsylvania producers are in many instances excluded from the markets in the South by reason of high rates which are made on a combination and are so high that they prohibit movement. The same is true of the Ohio plants. They can not get into Southern and Southeastern markets. Bad as those situations are, the examples have not been chosen with a view to holding up to inspection the highest rates but merely to show the character of the rates in the various sections of the country where brick is produced. It will be brought out that the unreasonableness of the rates is not confined to either short haul rates or long haul rates but is applicable to all rates and to all parts of the country. It will be asserted that the excessive rates stand as an insurmountable barrier preventing the movement of brick

and tile in the volume in which they should move and in which they would move if there were adequate and reasonable rates.

* * *

New Bill May Permit Raise in Rail Rates

Reports indicate considerable opposition to the Esch bill which is being given attention in Congress at the present time. It is stated that within two months after the return of the railroads to their private owners there will be general increases in railroad rates. Members of Congress who have studied the Esch bill, say that no other conclusion can be drawn from a study of one section of the bill, which they say, contemplates the filing with the commission and granting by the commission of general advances in rates, fares, and charges preliminary to applications by the railroads for money under the government guaranty.

Opposition to this provision of the bill is based on the charge that the shipper and the public are given no consideration in the matter, have no chance to protest or be heard on proposed rate advances. Even the Interstate Commerce Commission is restricted in the matter to the extent of increases that the railroads may be granted.

* * *

Some More H. C. of L. Data

J. P. H. Perry, vice-president of the Turner Construction Co., of New York, states that steady mounting costs of building material, shortage of labor, and social unrest will inevitably cause a 15 per cent. increase in cost of construction of building projects next spring.

CONVENTIONS IN PROSPECT

December 2, 3 and 4—American Face Brick Association, French Lick Springs Hotel, French Lick, Ind.

December 2, 3 and 4—Face Brick Dealers' Association of America, French Lick Springs Hotel, French Lick, Ind.

December 18—New Jersey Clay Workers' Association and Eastern Section of the American Ceramic Society, Rutgers College, New Brunswick, N. J.

January 27, 28 and 29—Canadian National Clay Products Association, King Edward Hotel, Toronto, Ont.

February 16, 17 and 18—Common Brick Manufacturers' Association of America, Deshler Hotel, Columbus, Ohio.

February 18, 19 and 20—National Brick Manufacturers' Association, Deshler Hotel, Columbus, Ohio.

February 23, 24, 25 and 26—American Ceramic Society, Hotel Walton, Philadelphia, Pa.

WHAT NEXT!

Dyed-in-the-Wool Brick Man Takes to Promoting New Concrete Aggregate—But, Hush! Soft Pedal, It's Made of Clay

NOT MANY YEARS AGO, all that was necessary to start an argument with a brick manufacturer was to tell him you were favorable to concrete construction. The idea of using cement was about as welcome to him as a boil on his neck or hay-fever. He was as friendly with the cement manufacturer as a pack of strange bull dogs.

But times have changed. The brick manufacturer has long since realized that concrete has its place in the building world as well as brick and other clay products, and that the only reasonable and commendable attitude to assume is one of tolerance. In other words, live and let live.

It is just another step to announce that a brick manufacturer has spent a fortune in experimenting with and perfecting a concrete aggregate made of clay. This man is Stephen J. Hayde, also a prominent contractor of Kansas City, Mo.

However, it is one thing to patent a new and excellent material; it is quite another to manufacture it practically and economically. In order that this might be accomplished, a company has been incorporated of which B. W. Ballou, a well known face brick manufacturer, is president. The name of this concern is the American Aggregate Co., and it has taken over all of the patents and contracts of Mr. Hayde.

THE THIRD LINK

But just as there is a difference between invention and practical manufacture, so there is another necessary and distinct step of development in the perfection of any patented article for universal use and that is the matter of marketing the product. The third important link in this particular industrial chain is none other than William H. Gifford, of Chicago, more generally known as "Giff"—and thereby hangs a tale.

Mr. Gifford, who for more than three years has been manager of the brick department of the Wisconsin Lime & Cement Co., Chicago, Ill., resigned his position with that leading building material concern on November 1. Prior to coming to the Wisconsin Lime & Cement Co., Mr. Gifford was with the Cleveland Builders Supply Co. for nine years, having held the position of salesman and later sales manager of that concern's brick department, so you see he is a dyed-in-the-wool brick man. Mr. Gifford has made an enviable record with the Chicago concern. When he came to take charge of the brick department, the Wisconsin company was second from the end of the list of face brick dealers in Chicago in the volume of sales. At the present time, if our information does not fail us, the Wisconsin Lime & Cement Co. is second from the top in the matter of face brick sales.

"Giff" is well thought of by all of the face brick manufacturers shipping into the Chicago market and consequently has a host of friends in clay circles, so when it was learned he was to leave the Wisconsin Lime & Cement Co. much speculation was rife as to his next connection.

THE MAN OF THE HOUR

In becoming general manager of the American Aggregate

Co., Mr. Gifford assumes the burden of putting this remarkable material (Haydite) on the market. "Haydite" is a light-weight aggregate made from clay or shale. It is of a bloated or swelled nature caused by the gases and vapor generated by the decomposition of the clay when subjected to high heat. The expanding gases not only bring out this form, but fill the burned clay product with a series of non-connecting holes causing a light sponge-like material to be formed. It weighs only about fourteen hundred pounds to the cubic yard when crushed ready for use. However, one seldom refers to the weight of this material but on the



WILLIAM H. GIFFORD.

other hand refers to it by volume. Concrete made from ordinary aggregate, that is, crushed stone or gravel, ordinarily weighs one hundred and forty to one hundred and fifty-five pounds per cubic foot. Where "Haydite" is used instead of ordinary aggregate the weight of the concrete is considerably less, being only ninety to one hundred and six pounds to the cubic foot. Tests made by the Bureau of Standards on concrete made with "Haydite" show from 1:3 to 1:4 mixtures, compression strength of 3,140-3,300 pounds per square inch on seven-day pieces. Concrete made from "Haydite" also shows greater strength in tension as well as in compression than ordinary concrete. Thus it is seen that "Haydite" will make concrete not only fifty per cent. lighter but also from thirty to forty per cent. stronger than other aggregates now in general use.

Furthermore, the concrete made from "Haydite" is devoid

of capillary attraction, expansion and contraction and is practically fire and water-proof. When the substance is used it is generally included in a 1:3 mix. About one-third of the volume of the aggregate passes a ten mesh sieve and ranges in size from ten to two hundred mesh, and the remaining two-thirds of the material is in sizes from ten mesh to one-fourth of an inch. It is a peculiar fact that "Haydite" itself is a very weak material, yet a stronger concrete can be made from it. It is also a non-absorbent and non-conductor of current and sound.

TO LICENSE OTHER PLANTS

Now that the American Aggregate Co. has taken over all the patents, contracts, etc., of Mr. Hayde, it has started the construction of a plant and will soon commence the manu-

facture of "Haydite" as well as license other firms to manufacture this material in other territory. The manufacturing process is very simple since most any shale or clay can be used. Clay, which for many purposes is too high in lime or contains a small percentage of lime pebbles which prohibits its use in manufacturing brick, can often be used for making "Haydite."

It will be the work of Mr. Gifford to license plants at various locations to manufacture this material under certain simple provisions. It is expected soon to start a plant in Cleveland, Chicago, Detroit and other well known centers.

In addition to his work with the American Aggregate Co., Mr. Gifford will be associated with B. W. Ballou, general manager of the Kansas Buff Brick and Manufacturing Co., in his various brick enterprises.



ADVOCATES UTILIZING 80,000,000 ACRES *of* WET and OVERFLOWED LANDS

By John A. Fox

THE NATIONAL DRAINAGE CONGRESS, an association of all interests thruout the nation directly or indirectly concerned in the drainage, reclamation and development of swamp and overflowed lands, has just held its annual convention. The Congress met in St. Louis, on November 11, 12 and 13, with headquarters at the Planters Hotel, and from all indications the attendance was very large.

The Congress does not advocate any particular scheme nor does it endorse any particular project, but it has worked continuously for the last seven years in an effort to awaken public sentiment thruout the country to an appreciation of the vast areas of wet and overflowed lands with a view to bringing about their reclamation and utilization at the earliest possible moment thru state and federal cooperation. A report published a few years ago by the Department of the Interior disclosed the fact that there were approximately eighty million acres of these lands located in the various states, which could be readily and economically reclaimed by drainage or by levee protection. The list of these areas as published at that time showed the following:

	Acres
Alabama	1,120,000
Arkansas	5,760,000
California	1,850,000
Connecticut	37,700
Delaware	200,000
Florida	18,500,000
Georgia	2,400,000
Illinois	2,688,000
Indiana	1,000,000
Iowa	800,000
Kansas	160,000
Kentucky	224,000
Louisiana	9,600,000
Maine	240,000
Maryland	356,000
Massachusetts	138,700
Michigan	4,400,000
Minnesota	4,500,000
Mississippi	6,173,000
New Hampshire	43,000
Nebraska	256,000
Missouri	1,920,000
New Jersey	601,900
New York	576,000

North Carolina	2,400,000
North Dakota	226,000
Ohio	200,000
Oklahoma	35,000
Oregon	500,000
Pennsylvania	96,000
Rhode Island	17,900
South Carolina	1,760,000
South Dakota	226,000
Tennessee	800,000
Texas	1,620,000
Vermont	70,000
Virginia	384,000
Washington	75,000
West Virginia	2,500
Wisconsin	2,500,000
Wyoming	25,000

Total74,471,700

It will be seen from the above that nearly all of the states are interested in this very important national matter, and while the larger areas of swamp and overflowed lands are to be found in the immediate Mississippi Valley and along the Atlantic and Gulf Coast, there are nevertheless areas of sufficient size in most of the other states to justify their interest in the matter. Taken in the aggregate these eighty million acres of land comprise an area of 125,000 square miles, or a greater area than the combined acres of the states of Iowa and Illinois, and as is well known to soil experts this land is perhaps the richest and most productive of any of our lands. Nearly every farmer is familiar with this character of land as "bottom lands" and knows that his bottom lands are the richest and will produce more than any other lands on his farm. Every acre of this rich, undrained region is bottom land and when reclaimed and put under cultivation it will produce from three to four times as much as the ordinary upland.

A MENACE TO PUBLIC HEALTH

In their present swampy condition these undrained lands in the various states thruout the Union are a nuisance and a menace to the general health, while if reclaimed and utilized they would be extremely productive areas. For that reason every community adjacent to these wet and overflowed sections of the various states is par-

ticipating in the activities of the National Drainage Congress with a view to having something done that will lead to their early drainage and reclamation.

It is only thru a campaign of education that the people generally thruout the nation can be apprised of the economic value of this enormous undeveloped area and the present time, when we are bending every effort to increase our production and thereby to some extent reduce the high cost of living, seems most opportune to seriously consider the matter.

The very interesting feature about this rich unrecognized heritage of ours is that in most cases the large areas of swamp and overflowed lands are nearest to the center of population, for example in the states of Missouri, Arkansas, Mississippi and Louisiana, one might say in the very heart of the country, there are approximately twenty million acres of these lands that could be utilized. The land is so rich that when properly drained and placed in cultivation it will produce almost three times as much as the famous corn-belt lands of Illinois and Iowa, which would mean that our supply of meat, wheat, corn, oats, cotton and sugar cane could be materially increased by the utilization of this valuable territory.

Much has already been done in the way of reclamation by drainage during the last ten years, due to the improved methods of excavation and the reduced cost at which work of this character can be done, because of improved machinery needed for cutting the canals and constructing the levees and wonderful results have been obtained, particularly in the great St. Francis and Yazoo basins adjacent to the Mississippi River in Missouri, Arkansas and Mississippi, also along the coastal marshes in North and South Carolina below Norfolk. Enormous crops are now being produced on these reclaimed lands and yet only a few years ago they were cottonwood and juniper swamps.

One great advantage of nearly all of these wet land areas is that they lie not only close to the center of population, but are within easy reach of our markets and in most instances are already provided with adequate transportation facilities. They could easily support a population of one hundred people to the square mile at the most conservative estimate and when properly reclaimed and settled to this extent the development of these lands would afford room for a population of over twelve and one-half million. Their economic value to the nation can be readily seen when we take into consideration the present farm values in Illinois and Iowa, where land not nearly as rich is bringing from \$200 to \$300 per acre. Placing a nominal value of \$100 per acre on these swamp lands when they shall have been reclaimed would show an economic value of over eight billion dollars.

Unfortunately very little of this enormous swamp land area is now owned by the national government, altho prior to 1851 these were mostly public lands but thru acts passed in 1849, 1850 and 1851, and known as the swamp land grant acts, most of these lands were transferred by the national government to the several states in which they were located and have since been sold by the states and the funds derived from their sales used unwisely in many instances in an effort to effect drainage and flood protection. Most of the improvements that have been made thus far therefore have been done thru private enterprise and without the assistance of state or federal aid, altho if some national legislation could be enacted whereby bonds could be authorized and underwritten by the national government much greater progress would be made.

There were quite a number of interesting questions

discussed at the St. Louis congress. Among them was a consideration of the Smith-Chamberlain Bill and the Mondell Bill providing national legislation such as will materially hasten the work of reclamation now under way.

Members of the cabinet, governors of states, leading investment bankers and distinguished engineers from various parts of the country were asked to address the congress and some of the subjects which were handled by them were most instructive and most helpful in solving the question.

The farmers thruout the country are particularly interested in the outcome of the work of the National Drainage Congress because it means the opening up of millions of acres of new and extremely productive lands that will be available for settlement and development.

* * *

A Short Course in Ceramics to Be Given at the New York State School of Ceramics

It has been decided to resume the practice of giving short courses in ceramics at the New York State School of Ceramics. A course of lectures in laboratory demonstration was given for several years but owing to the conditions resulting from the war, it was omitted last year. The demand for trained ceramic engineers is greater than ever before, many times exceeding the available supply. The entrance of these technically trained men into ceramic industries is having a telling effect in that all manufacturers are required to raise their standards and increase their efficiency in order to meet competition.

The object of the short course is to give managers, superintendents, foremen and workmen in ceramic plants an opportunity to gather in a few days a general understanding of the technology of the industry in which they are interested.

The course is arranged to cover all of the important ceramic industries and the subjects are handled by prominent men in the various fields of ceramics. Ample opportunity is given for discussion of any subject which may be raised, so that anyone having problems which are giving trouble will be greatly benefited by attending the course.

In connection with this course, there will be held a meeting of the New York State Section of the American Ceramic Society, occupying one afternoon and evening. The short course will run from the noon of December 15 to noon of December 17. The meeting of the New York State Section of the American Ceramic Society will be held during the afternoon and evening of the 17th.

For any practical man who is interested in obtaining a fundamental course in ceramics, it is possible for him to go to the New York State School of Clayworking and Ceramics at any period and they would undertake to lay out a course of study for him on any problem he might wish. A party could come for three months or longer but the above school does not recommend any course less than six months.

There are a great many men in the industry who are interested in this matter and it very likely that such a course will appeal to a large number.

* * *

4,000 Emigrants Sail from New York

The New York "Times" states that three liners sailed for Europe on October 4 with 4,000 passengers, of whom 2,000 were Italians, Poles and Greeks, on their way home in hope of obtaining a share of the lands which comprise new territories gained by their respective countries in the war.

WHERE *a* LESSON *in* CLAY MANUFACTURE *may be* LEARNED

*Paving Brick Plant at Alton, Illinois, Featured by Unusual
Equipment Which Aids in Keeping Down Operating Costs*

IF EVER you are in St. Louis don't neglect the opportunity of visiting the model paving brick plant of the Alton (Ill.) Brick Co., which is located but a short distance north of St. Louis. This factory, which is a very modern and efficient one in every respect, has a daily capacity of sixty



Note Double Storage Pile of Ground Clay and Automatic Tripper in Upper Right Hand Corner of Picture.

thousand brick. It is under the management of Eben Rodgers, who is a well known figure thruout the industry. There are many unusually good and interesting features to be seen at this establishment, and a trip thru it is well worth any clay product manufacturer's while.

The shale pit is somewhat difficult to work, and because of its complications, three shovels are required to win the clay. One electrically operated shovel is used to dig the soft surface clay, part of which is used in the body of the brick. Another shovel which is steam operated is employed for the purpose of digging an overburden containing a mixture of clay, shale and sand rock, all of which tops, by a thickness varying from fifteen to twenty-five feet, the shale used in the composition of the brick. The shale proper is dug by an eighty-ton steam shovel from an eighteen-foot bank. Blasting is resorted to only in places where the rock is too hard to handle by the shovel. In this case a well-driller is employed to drill the blasting holes.

OPERATIONS IN THE CLAY PIT

Four men are employed around the shovel, one fireman,

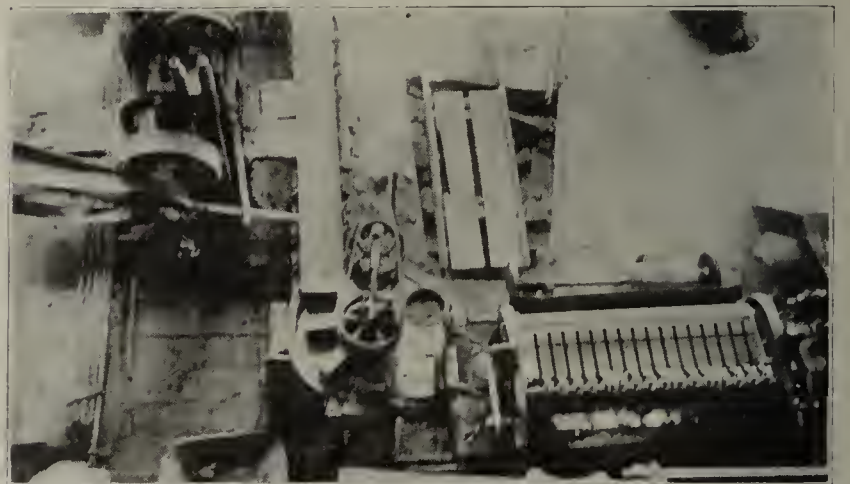
one lever man, one operator and one helper. When a large chunk of shale, which is larger than the shovel can handle very well, is loosened and lies at the bottom of the pit, a chain is placed around it and attached to the bucket and the lump drawn up to a point where the teeth of the shovel can act favorably upon the large lump so as to break it up into smaller and easier handled pieces.

The cars are operated in units of three by means of a small steam dinky locomotive which brings them to the foot of the incline where one man takes care of the hitching of the wire rope which pulls the car up the incline into the factory. Here the shale is dumped into a bin which feeds a large jaw crusher, breaking up the lumps into sizes more convenient for the dry pans to handle. By using this crusher there not only is much less wear on the dry pans but also a greater capacity is obtainable.

GROUND CLAY STORAGE BIN OF GREAT ADVANTAGE

The shale after being ground in three dry pans is conveyed by bucket elevators to a large two compartment steel storage bin, each section measuring about 85 feet long, 20 feet wide and 25 feet deep, and holding a week's supply of ground clay. The position of the storage bin is very favorably located inasmuch as it is right abreast the machine room and does not take up very much space nor interfere with a good factory layout.

One bin is in the process of being filled while the other is being emptied. Thus, all the clay used in the manufacture of the brick has had at least some storage. It has been found that even this short time storage of the raw clay improves the quality of the brick noticeably. An equal distribution of the clay and a thoro mixture is obtained by means of two trippers, one over each bin. The ground clay is dumped upon the conveyor belt by the bucket elevators and the former then passes over a tripper which disposes of the clay. The tripper moves slowly back and forth over rails thruout the entire length of the bins and



Bird's-eye View of Cutting Machine, Turntable, Offbearing Belt and Repress Machine.

pours a one-quarter inch thickness of clay over the entire pile in storage. In this way any irregularity which occurs

in the quality of clay obtained from the bank, has but little effect upon the product because it is distributed in very small quantities uniformly thruout the entire storage pile. The result of this practice is that an absolutely uniform quality of paving brick is always made.

The bins are emptied by two men aiding in causing the clay to slide on to a conveyor belt running beneath the floor in the center of each bin. A bucket elevator transfers the clay to a large disc feeder which supplies the pug mill with a steady and uniform flow of ground clay.

USE DEVICE TO CHANGE FLOW OF PRODUCT

The machine room is very much similar to that of the ordinary modern paving brick plant with the exception of a turntable which is very unusual in construction and forms the part of the equipment of but very few plants in this country. The brick are pushed on to this turntable directly from the cutter. The turntable is merely a large circular iron plate which is caused to revolve continually by reason of being connected with a belt to a small electric motor.



Part of Continuous Kiln, Kiln Roof and Housing for Long Conveyor Belt Used to Distribute Coal to Boiler Plant and Gas Producers.

The iron plate discharges the brick upon the offbearing belt from which the brick are taken and placed upon dryer cars in the regular manner. By using the turntable to bring about a ninety degree turn in the flow of brick, much space is conserved and a better plant layout is obtained. The dryer cars which are of the single deck type are placed into the twenty-four track dryer designed by the L. E. Rodgers Engineering Co. The heat is obtained by means of air being drawn by a fan thru a large coil of steam pipes. The steam is generated in a boiler fired by an underfeed stoker. The recording thermometer placed at the center of the dryer registers about 215 deg. Fahr. Storage room for



Large Pipe Thru Which Ashes Pass as They Are Discharged by Steam Blowing at Tremendous Pressure.

about four cars at the hot end and two cars at the cool end are arranged for at the dryer.

The kiln equipment consists of two gas-fired continuous kilns designed by Mr. Rodgers, after the principles of the Youngren kiln. One is a fourteen chamber single unit

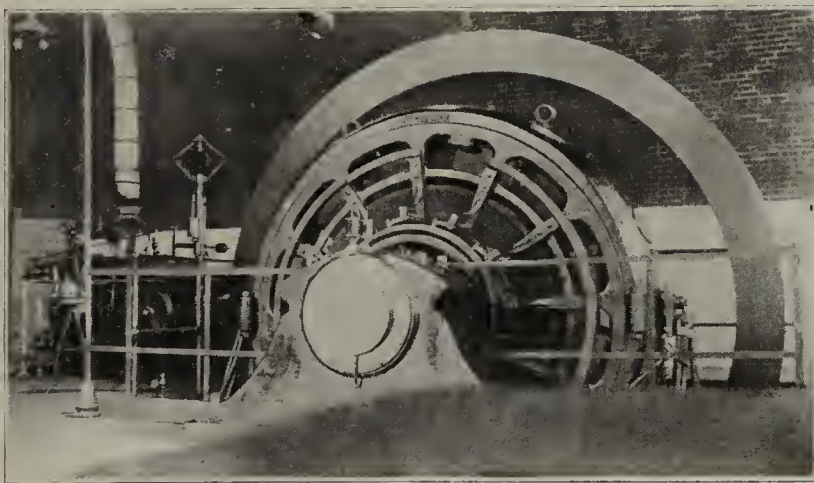


Unloading Point for Coal Cars and Part of Conveying System Which Supplies Power House With Fuel.

kiln. That is, all of the chambers are adjacent to one another in one long string. The other kiln has sixteen chambers in a double unit, built so that there are eight chambers in a row. The chambers of the large kiln have a capacity of forty thousand brick each while the chambers of the small kiln each hold thirty thousand pavers. In operation a round is made of the sixteen chamber kiln every twenty-four days and the fourteen chamber kiln every sixteen days. Two gas producers fired with Illinois nut coal form part of the equipment of each kiln. No steam jet is used with these producers but they are placed over a water basin which supplies sufficient steam from hot falling clinkers to break the clinker on the grates.

BOILER PLANT AND COAL DISTRIBUTION FEATURES

A feature of the plant is its coal distributing system. All of the fuel used is unloaded at one point and distributed



View of the Large Corliss Engine-Dynamo-Generator Set Which Supplies the Electrical Energy for Operating the Plant Machinery.

by over-head belt conveyors which carry the coal to the gas producers or power house.

The boiler plant at this factory is a model one for clay plants. All of the electricity required to supply the energy for the motors which drive the various machines thruout the plant, is manufactured here at an extremely low cost. The coal which is contained in two steel hoppers, one above each of the two boiler units, is fed into the hoppers of the chain grate stokers upon which it is consumed for supplying the necessary heat for the boilers. The equipment is very complete as well as modern and includes pumps, feed water heaters, and so forth. Two engine units are used, the larger unit which is used during the day when all of the machinery is running, consists of a 600 h. p. Corliss steam

engine which converts the energy of the steam into electrical energy by means of a 400 kw., 250-volt, 1,600-ampere dynamo generator set. The smaller unit which is used at night when only the fans are running consists of a smaller Corliss steam engine of 225 h. p. and 150-kw. dynamo generator set. All of the power for the entire plant is supplied thru this boiler plant, even including one of the shovels used in the clay pit.

The large stack which is ordinarily seen accompanying the average boiler plant, is missing here because the draft is induced by means of a fan. Another feature of the plant is the ash disposal system. Instead of being required to get down into the hot ash pits and shovel out the ashes, it is blown out by steam thru a long pipe of about eight inches in diameter. The ashes are blown into a ravine as shown in the accompanying illustration and no further attention is required for ash disposal. The system operates very successfully and is highly satisfactory.

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Change in Dates of Illinois Short Course

Owing to the meetings of the National Brick Manufacturers' Association and the American Ceramic Society, which have been scheduled for the last two weeks in February, the dates for the Short Course to be given by the Department of Ceramic Engineering of the University of Illinois, have been fixed from March 1 to March 13, 1920, instead of in February, as announced on Page 852 of the November 4 issue of *Brick and Clay Record*. Programs of the course will be available for distribution about January 1.

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Low Rate to River Cities Threatened

Action of the Interstate Commerce Commission at a recent southern hearing in disregarding waterway rates as compared with rail rates, taking the position that waterways do not handle enough freight to effect rail rates today, may result in higher rates for such cities as Evansville, Louisville, Cincinnati, Memphis, Nashville and other cities of the Central South, which are located on navigable streams. The traffic department of the Louisville Board of Trade and other organizations are somewhat alarmed over the threatened effect of any movement that would take away from river cities the lower rail rates which they have long enjoyed. Carriers have always handled lower rates to cities on navigable streams, as in the early days the river transportation was a big factor.

* * *

Establishes High Record for Laying Brick

A new high record for laying paving brick is said to have been established a few weeks ago by Henry Murray, a layer employed by Contractor R. J. McFadden on a job in Moundsville, W. Va. On one day Murray laid 20,160 brick and the following day exceeded this high record by laying 24,640 pavers, or a total of 44,800 brick in two days. This is said to have been the most brick ever laid by one man on a paving job in two days anywhere in the United States.

* * *

Plans For Manufactures Census Completed

Special effort is being put forth to make the manufactures section of the approaching Fourteenth Decennial Census the most complete and comprehensive inventory of the Nation's manufacturing establishments ever taken, according to officials of the Bureau of the Census who have this work in charge.

The schedules which will be used in tabulating the information about the country's industrial resources have already been prepared and printed. These schedules will be mailed to every manufacturing establishment in the United States during the month of December so that factory owners and managers can familiarize themselves in advance with the questions to be answered when the records of the past year's business have been compiled. The questions relate to the calendar year 1919.

In 1914, the year the last manufactures census was taken, about 275,000 manufacturing establishments were listed by the Census Bureau. This time more than 300,000 establishments will be sent schedules. In addition to this it is expected that about 50,000 mines and quarries will also be reported.

The inquiries relating to manufactures, as specified by the Act of Congress providing for the Census, include the name and location of each manufacturing establishment; character of organization, whether individual, corporate or other form; character of business or kind of goods, manufactured; amount of capital actually invested; number of proprietors, firm members, copartners and officers, together with the amount of their salaries; number of employes and amount of their wages; quantity and cost of materials used in each establishment; quantity and value of products; principal miscellaneous expenses; time in operation during the year; character and quantity of power used; and character and number of machines employed.

The questions as outlined above will be covered by the general schedule which every establishment will receive. In addition to this a supplemental schedule will be sent to the sixty-eight principal industries as classified by the Census Bureau. This supplemental schedule will allow detailed statistics of output to be set forth under the heading "products manufactured."

The census of manufactures is limited to manufacturing establishments with an annual product of at least \$500 conducted under what is known as the factory system, exclusive of the so-called neighborhood, household and hand industries. However, no establishment is too small to be counted by the government if it comes within the definition of a manufacturing establishment.

Census Bureau officials emphasize the fact that all information gathered by the census is strictly confidential, made so by Act of Congress, and is for general statistical purposes only. The same is true of the censuses of population, agriculture, mines and quarries, oil and gas wells and forestry and forest products.

Many startling figures are expected to be shown by the approaching compilation inasmuch as the industries of the country were for the most part in a subnormal condition in 1914, the year the last manufactures census was taken.

* * *

Export and Imports of Clay

Figures compiled by officials at the Port of New York, covering the exports and imports of clay during the month of August, show the following totals:

Exports—Fire clay, total \$2,312, as follows: France, \$275, 10 tons; Cuba, \$502, 26 tons; Venezuela, \$687, 57 tons; Argentina, \$315, 12 tons; San Domingo, \$293, 22 tons; Mexico, \$100, 5 tons; French West Indies, \$98, 4 tons; Dutch West Indies, \$28, 1 ton; Costa Rica, \$14, 1 ton.

Other Clays—total, \$1,028, as follows: Scotland, \$750, 30 tons; Cuba, \$130, 4 tons; Mexico, \$98, 1 ton; Barbados, \$50, 1 ton.

Imports—China Clay, from England, \$96,293, total 6,732 tons. Other clay, from England, \$10,259, total 879 tons.

INDUSTRIAL DEMOCRACY— A REMARKABLE EXPERIENCE

Showing How Cordial, Cooperative and Mutually Profitable Relations Were Established Between Employers and Workers—The Key to the Solution of One of the Most Serious Questions Confronting America Today

By B. C. Forbes

Editor of "Forbes Magazine"

CORDIAL, friendly, cooperative—and mutually profitable relations can be established between employers and workers.

This article tells how such relations were brought about in one plant six years ago and have continued unruffled ever since, with results that must read like a fairy tale to the average employer who is eternally confronted with the "labor problems."

I confess that I have derived as much joy in obtaining and writing this article as anything I ever wrote—because it gives the key to the solution of what, to my mind, is the most serious question confronting America today.

This is not a theoretical treatise. It is a record of facts, of practical, workaday achievements in an ordinary, everyday industrial plant. The plan is not a mere experiment. It has been in operation for six years thru hard times and good times, thru war and peace. It has successfully met the exigencies of piece workers as well as regular wage earners.

EFFECT ON EMPLOYEE'S HOME LIFE

Briefly, The Packard Piano Co., of Fort Wayne, Ind., used to have its share of labor troubles, but its president, Albert S. Bond, one day fully six years ago heard a speech delivered by John Leitch, business engineer, on Industrial Democracy. (The principles of Industrial Democracy have been explained in previous articles.)

Mr. Bond had worked in the Packard piano factory from the time he was sixteen until he reached twenty-one, when he was put on the road as a salesman. Five years later he was made manager. He got along with the workmen about as well as the average employer; but after a strike which the company "won," he realized that the majority of the men hadn't the right spirit toward their work. On hearing the Leitch speech, it suddenly dawned on him, to quote his own words to me:

"I had allowed myself to get out of tune with the boys. During my years on the road and as manager I had lost the art of looking at things thru their eyes, of thinking their thoughts, of speaking their language. I approached things from a different angle.

"Then and there I made up my mind that I must get back into their hearts, gain their confidence, and work hand-in-hand with them.

"I did some mighty serious thinking. I concluded that if we were ever to have the best kind of a world for us to live in it was up to employers not to leave the ministers to do all the preaching on Sunday, but to get busy and do the right thing by one another every day in the week, and thus

preach good will and brotherliness and all that sort of thing thru practice, thru application of the Golden Rule in the factory and the office and in every relationship with one's employes as well as with others."

It was in this attitude that Mr. Bond approached Industrial Democracy. Its plan for giving every worker a real voice in the running of the plant in so far as it affected working conditions, hours, wages, etc., appealed to Mr. Bond as eminently fair, eminently democratic and as likely to bring unlimited benefits to all concerned, including the stockholders, since fifty per cent. of all savings would go to the company after paying the other half to the men. What has happened in the intervening years let Mr. Bond now tell.

"One of the first things that impressed me after we installed Industrial Democracy, in the fall of 1913, was the effect it immediately wrought upon the home life of the men. Several of the wives of our workers stopped me and asked, 'What are you doing at the factory? John is a different fellow around home. He does not spend so many evenings away from home, and he seems to take more interest in our home and our children. What's the explanation?'

"I found that the habits and characters of the workers had been distinctly improved under their new system of working conditions. Fewer evenings were spent in saloons. Late hours were cut out. As the wife of one man remarked, 'Jim would have a fit if he were not to get up in time to be at his work on the dot.' Their homes and their wives and their children began to mean more to the men. The joy they were finding in their work had an effect upon their whole temperament, both inside the works and inside their homes. Their more regular habits naturally contributed to improving their health, and this in turn helped to make them feel happier.

"This experience convinced me that we were on the right track in seeking first of all to build men. I clearly realized that if we could build the right kind of men, the men would build the right kind of pianos and that, all working together, we could build the right kind of a company. This sizing up of the situation has been abundantly fulfilled, for today we can get both quality and quantity production as no concern run under the old, unsatisfactory economic system can possibly match.

ALL GOT INTO THE GAME

"Of course, the movement was not welcomed by every man in the place at the start—there are always in any large group of men some who are suspicious and distrustful. I knew that this condition existed, but hoped that the actual

working out of the plan would, by its admitted success, cure the skeptics.

"At the end of about a year, however, there were still four or five men who had not acquired the new spirit and had not fallen into line with the rest of the loyal, enthusiastic workers. So, at one of our regular mass meetings, I got up and said:

"There is a matter I want to bring up, altho it hurts me to do it. There are four or five fellows who haven't got into the game, who are suspicious of us, who are saying things about the other men and also about the institution. We must do something to correct this, for it means that these disturbers have got their hands into your pockets, because they make it impossible for you to earn as large wage dividends as you would earn if they fell into step and worked in the same spirit and with the same zest as the rest of us work. The easiest way would be to get rid of them. But they are all good workers, and my suggestion is that we should, by our example and by our influence, try to show these men the error of their ways and bring them into the family fold, heart and soul, so that they will be with us and for us to the hilt, just as the rest of us are with and for one another. I don't need to mention names. You men know who they are. They are sitting in front of me right now. Maybe you will not all agree with my suggestion. You may have something better to offer, but I want to say this. I am not going to discharge these men. If they go it is going to be because you men do not want them.' Immediately one of the men arose and said, 'I move that we give them a two weeks' trial to show whether they want to get into the game or get out.' The motion was put, seconded and carried without a dissenting vote.

"The very next morning three of those fellows when they got on the street car on their way to work spoke to men they hadn't spoken to for some months. Every one of them promptly got into the game and stuck. They realized that they were not working for The Packard Piano Co., but with the members of that organization and that if they were to hold their jobs they had to work in the right spirit with the fellows with whom they were associated.

"In the summer of 1914, before we had really got Industrial Democracy running with perfect smoothness, the war broke out, the piano business was badly hit, and this subjected the plan to a severe test—altho let me add, if the war proved anything it proved the value of music to the multitude; it proved that music was one of the absolute essentials, both in maintaining the morale of armies and in maintaining right conditions in industrial and social life. I could see bad times ahead and was worrying a good deal over what would be the best course to follow when, to my astonishment, at a meeting in September—within two months after the war started—one of the men, a cabinet maker, read a letter stating that it was clear that there would have to be drastic curtailment of production and more or less shutting down of departments. The letter finished up: 'As a suggestion, I think if we take a day or so off now and then would help a great deal. Take a day or two extra on Labor Day instead of waiting and getting it all in one lump, what is liable to follow if we don't. What do you suggest? Now is a chance to cooperate!'

ALL BECAME EFFICIENCY ENGINEERS

"As the discussion proceeded, I began to feel almost like an outsider. The workers began to inquire of one another as to how little they could get along with until things changed for the better. Every foreman volunteered to reduce

his own wage 25 per cent. Then, instead of laying off a lot of men, the meeting recommended that the factory run three days a week, and I had to argue with them to convince them that we could keep running four days a week.

"As war jobs offered themselves some of the men who could not very well afford to live on four days' pay left us, but our readjustment to the war-time conditions was brought about and carried out smoothly and satisfactorily. During the first two years of the war about 100 of our 300 men found places elsewhere.

"Business began to revive briskly in the fall of 1916, and we were then up against a new problem. Materials, wages and costs of all kinds had increased, and it was manifest that we would have to raise prices unless some means were discovered of greatly reducing costs. As usual, the whole matter came up for consideration of the entire force. When I explained the situation the men expressed the fear that any raising of prices would curtail orders. Also, as none of us could be sure that the recovery in business would last longer than the fall months which are always the busy ones in our line, the men felt it would not be just to take back either old workers or engage new ones, seeing that they might have to be laid off as soon as the seasonable spurt was over.

"The decision of the meeting was that there were enough workers to cope with all demands then in sight. Also, the view was then expressed that if everyone applied himself diligently to thinking up ways and means of saving labor, and perhaps inventing new methods to perform some of the tasks, costs could be kept down so that prices would not have to be raised.

"The very next week one man evolved certain ingenious methods for turning out the work he was doing and voluntarily recommended that their rate be reduced from 42 cents to 11 cents per piece, and he made more money at the reduced price. In fact, every workman became, as they said, an 'efficiency engineer.' They took up the problem just as keenly as I, as president, could possibly have done, with the net result that we neither had to increase our force nor raise prices at that time.

"From then on the demand for our pianos kept increasing, and we have taken back every man who has applied. We have even sought out men who were dropped during the war emergency and brought them back into our family. Lately we have been trying to expedite the release of some of our men who are still in the army.

"With us, as with some other plants having Industrial Democracy, we work usually thru a Committee of the Whole. When any subject comes up requiring investigation a special committee is elected. Committees always consist of five members, three elected by the men and two by the company. The men always have the balance of power. It may interest other employers to learn that never has a question been placed before such a committee that it did not work out a solution satisfactory both to the men and to the company. We used to hold an Industrial Democracy meeting of the whole force every week but after eighteen months of it we adopted monthly meetings, as there were not enough questions arising to call for more frequent sessions.

"One point the average employer may not realize the importance of is this: The president's or other chief executive's office door should always be open to every employe. There is no 'Private' sign on my door. If an employe has anything he wants to lay before me he knows he can walk straight in at any time and, no matter what I may be doing, the employe has my immediate attention. The con-

sequence is that not only do our men come to me with purely shop problems, but they often drop in to discuss domestic and other intimate, personal matters. By adopting this attitude, and living up to the spirit of Industrial Democracy, always keeping its ideals actively before them, there is no trouble in getting along smoothly with workers. Even the knottiest of problems have a habit of dissolving under proper treatment.

"For example, recently a foreman came to my office and said there were certain piece workers some of whom received \$1.60 for one job and some \$1.25 for another, and that they didn't think these rates were fair. They suggested that both rates be changed to \$1.50. We called in the workers concerned, and after talking it over it was arranged to the satisfaction of all concerned that the \$1.60 rate be reduced to \$1.45 and the \$1.25 rate increased to \$1.45. I could name numerous other incidents illustrative of how little and big questions such as arise periodically in all factories are settled with the same promptitude and the same good will all around.

WHAT THE WORKERS THINK

"This whole business of running a plant, or of conducting any other business, whether large or small, reduces itself to a few simple, basic principles. It is either right to do right or it is wrong to do right. One is constructive, the other destructive. The average human being recognizes that it is right to do right. Then why not throw yourself into the game whole-heartedly and try to teach your men how to live and serve and be happy? You can have either the Golden Rule in your plant or—hell. Some men say this isn't practical, that it can't be done. I don't believe there is any such thing as 'can't' when a thing is right and ought to be done.

"Of all things practical, this application of the Golden Rule to business is the most practical. It is nothing more than putting yourself in the other fellow's place and doing what you would want him to do to you. It is just putting into every-day practice the plain, homely truths taught at your mother's knee. If your motive is right things will work out all right.

"Industrial Democracy is the embodiment of a correct, humane, righteous principle. It calls for nothing but playing the game with your workers fair and square, always with your cards on the table face up. But of course, you must believe in it thru and thru. Even then it is not easy at the start to convince your workers that the thing is on the level. You have to sell it to your workers and keep them sold on it by living up to it gladly and thoroly.

"In our plant we used to work ten hours a day. Shortly after we took up Industrial Democracy we reduced this to nine hours. We gave this a third-day trial and at the end of this period it was found that, with two exceptions, every employe did more work than was done in ten hours. These two men were the best we had; it simply showed that they were working at capacity every hour of the ten. Under the nine-hour arrangement our workers earned a dividend, on top of the wages, of $5\frac{1}{2}$ per cent., based on increased production. That was in January, 1914. In May we suggested the feasibility of an eight-hour day. There was some objection to this—fully 80 per cent. of our men are piece workers. We urged them, however, to give it a trial for sixty days.

"In the first month we cut the biggest wage dividend we had ever had. And, of course, we have stuck to the eight-hour day ever since."

The foregoing tells you how Industrial Democracy has worked out from the employer's viewpoint. It is always well, however, to hear both sides. Therefore, I asked two or three of The Packard Piano Co. workers to tell me their impressions and experiences under the Leitch plan. Here is what Elda E. McNamara said:

"Having been with the Packard Piano Co. for about seventeen years, or nearly all of my working days, I have had an opportunity to see conditions in our plant, and I must say that they were not as pleasant as they might have been owing to a lack of understanding between the employer and the men. And, as one of the men, I naturally sided with them. I knew at that time there was something wrong with the way business was conducted, as the men seemed to hold back and not give their best efforts to their jobs—giving as little service as they could for what little pay they received, and the wage paid at that time was not very high. This same condition remained in the Packard plant until 1913, when we took on a new view of life, as I might say. One morning we were called together in mass meeting to hear a man whom Mr. Bond, the president of the company, introduced as John Leitch, a man who was trying to bring about a better understanding between employer and employes, and the subject for that morning was 'Justice.'

"So I thought to myself, 'Gee, that's all any man could ask for.' At first I was a little bit doubtful, and thought, 'What is this stuff they are trying to hand us now?' But I soon found out that the management was sincere in its desire to follow the teachings of Mr. Leitch, and thereby better conditions in our factory.

"Well, you know where there are about three hundred men with different opinions they didn't all fall in line at once, for it was something new and never heard of before. But before many months had passed every man was plugging for our new system, which we called the Packard Spirit, and I want to say that the men were hungry for it, as it looked nearer to a square deal than anything they had ever heard of before. And it wasn't very long before we were enjoying the most remarkable change in working conditions that could be imagined.

NEW IDEAS

"Before this change we had an efficiency engineer to do our thinking for us. But Mr. Leitch soon showed us that the men working on the job could do their own thinking if given a chance and work out their own problems, which we have done.

"New methods and new ideas sprung up thruout the plant, and the men were soon able to reduce the working hours from 10 to 8, and not work any harder nor slight the quality of their work, and make better wages. We realized that we are not only the makers of pianos but in a sense salesmen, as much depends on the quality of our work. So we put the best there was in us into our work, and this brought us more money.

"Our 'Business Policy' is our rule and guide in all our working affairs. All grievances are thrashed out at our regular factory meetings, with every individual in the organization present, and everyone is free to express his opinion. Harmony is the big thing in the Packard plant; it takes the grind out of the work and makes it a pleasure, and work is a pleasure when one knows it is appreciated."

Here, briefly, is a thoughtful little statement from another worker, A. M. Passino:

"You asked me to tell you my impression of conditions that existed in this plant prior to the adoption of our 'Busi-

ness Policy' as compared with the conditions as they exist now.

"I went to work for the Packard Piano Co. in 1890, a mere boy, and the conditions that existed up to 1912 remind me a good deal of the story of the two men who bumped into each other at a street corner and started to call one another names. It wasn't the fault of either, because the wind was blowing dust around and blinded both of them. But just the same they started to fight and pretty soon others come, took sides, and began to join in. After a while a mob was fighting.

"These conditions came about in this plant in the spring of 1912, when the management tried to introduce new methods. Some of the men didn't understand and were misled by others who didn't want to understand. Most of the troubles in life come thru misunderstandings. I misunderstand a man and he doesn't understand me. After a time, without any reason, we hate each other. If we had started on the right track in the beginning we wouldn't have had anything in the world against each other.

"Since the adoption of the John Leitch plan in the fall of 1913, a complete change took place, and today we never let these causes of misunderstanding and hate get started. We don't let them become weeds. There is too much to do, and we can't do things unless we all understand one another.

"Thru this understanding we also understand our work. We become skilled workmen, specialists, and yet we are not jealous of one another. We depend on each one doing the very best that is in him.

"This is my explanation of how things were before and after."

Another workman, James E. Jennings, summed up his view of Industrial Democracy in a vivid simile. He said: "There is as much difference between the old way and our present one as between a hot box and a well-greased bearing. Harmony has displaced discord, and concord antagonism. We are now one happy family, with one common purpose—making the finest pianos possible in the easiest and simplest way, and making such a success of Industrial Democracy that every employer and every employe will want to adopt it and obtain some of the advantages we are now enjoying."

Mr. Bond is not satisfied to stop at the satisfactory stage already reached in establishing cordial relations with his men. Industrial Democracy, to his mind—as indeed to the mind of its author, John Leitch—can be carried a number of steps further as conditions ripen.

"I want to have every man a stockholder and to have the men represented on the board of directors," Mr. Bond told me with great emphasis. "Then men who do the work and help to make a business a success ought to be regarded as the most valuable part of a concern's assets. Efficient, willing, satisfied labor is to be reckoned as the highest form of capital. Of course, money capital is absolutely essential and must be treated fairly, or failure would result ultimately.

"The ideal arrangement, and one which will probably come sooner or later, would be for capital and workers to share fifty-fifty in all profits after wages and a fair return on capital have been taken care of. There can never be a maximum of progress in industry or in our whole social life until the workers who bring about increased production or lower costs participate equitably in the financial benefits.

BETTER AND BROADER LIFE

"After all, employers are beginning to realize that neither they nor their business will be regarded as successful, no

matter how much money they may make, unless in the making of it they produce workmen who are a credit to themselves, to their business and to the nation. The mere building up of a fortune by hook or by crook, and with scant regard to the well-being of workers, affords no high order of satisfaction, but the building of men yields worthwhile gratification and happiness.

"Industrial Democracy, I can truly say, after six years of experience with it, has made life better and broader and happier both for me, as an employer, and every worker in our establishment."

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To Give Short Courses On Paving Subjects

Practicing highway engineers, contractors, engineer-salesmen and paving brick men will be interested in the short courses which will be given in highway engineering and highway transport at the University of Michigan during the winter of 1919-20. The following is the outline of short courses and fees required:

Civil Engineering 67. Highway Transport. Professor Blanchard. February 2 to February 6, Mondays to Fridays, 1:30 to 4:30 p. m. 1 hour credit.

Civil Engineering 68. Bituminous Surfaces and Bituminous Pavements. Professor Blanchard. December 1 to 19, Mondays to Fridays, 1:30 to 4:30 p. m. 3 hours credit.

Civil Engineering 69. Highway Laboratory Research. Professor Bateman. January 5 to 23. Mondays to Fridays, 10 a. m. to 12 a. m. and 1:00 to 5:00 p. m. 2 to 3 hours credit, dependent upon a student's previous training in highway laboratory methods.

Civil Engineering 70. Highway Bridges. Professor Gram. February 9 to 20. Mondays to Fridays, 1:30 to 4:30 p. m. 2 hours credit.

Civil Engineering 71. Specifications and Contracts. Professor Riggs. February 9 to 20. Mondays to Fridays, 1:30 to 4:30 p. m. 2 hours credit.

Civil Engineering 72. Earth, Gravel and Broken Stone Roads. Professor Bateman. March 1 to 12. Mondays to Fridays, 1:30 to 4:30 p. m. 2 hours credit.

Civil Engineering 73. Cement-Concrete Pavements. Professor Blanchard. March 1 to 9. Mondays to Fridays, 1:30 to 4:30 p. m. 1 hour credit.

Civil Engineering 74. Brick Pavements. Professor Blanchard. March 11 to 19. Mondays to Fridays, 1:30 to 4:00 p. m. 1 hour credit.

Civil Engineering 75. Highway Engineering Seminar. Professor Blanchard. December 1 to March 19. 3 hours credit.

Fees: The fees for courses are based on the number of credit hours for each course. The fee for each credit hour is five dollars.

For further information pertaining to the short period graduate courses, write to Arthur H. Blanchard, professor of highway engineering, University of Michigan, Ann Arbor, Michigan.

* * *

Another "Chunk" Out of the Lumber Supply

One billion feet of timber killed by 1,445 fires is the estimate given for Montana's tremendous forest fire losses for the season just closed. Half of the fires were started by human agency and were preventable. The fires burned over 570,000 acres of land and were suppressed at a cost of \$1,200,000, according to figures compiled by the forestry office at Missoula.

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products Such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

EFFICIENCY IN WALL AND FLOOR TILE PRODUCTION



WALL AND FLOOR TILE has come into its own again, and in a way that bids fair to eclipse all previous popularity. With the resumption of building operations has come the call for ceramics of this character and in unprecedented volume. There is justifiable reason for this demand, too, for ceramic tile offers numerous advantages for private and public buildings of all kinds.

It is an ideal material, in many respects sanitary, easily kept clean, simple to maintain, and decidedly refreshing in its immaculate atmosphere. Considering the attainments, good tile is an economy; it more than pays for itself in a short time, even though the first cost, today, including that of laying, is much in advance of what it was a few years ago. There are many grades of material of this nature, and the best is by far the more economical in the long run when service and maintenance are regarded.

The wide-spread demand for ceramic tile has brought about a necessity for greatest possible plant production, and every effort is being directed in this channel by factories in different parts of the country. This need for capacity output, coupled with labor scarcity and other labor difficulties, has shown the extreme urgency for utmost efficiency in manufacture, replacing man-labor with modern machinery and utilizing up-to-date equipment in all departments of operation. Labor-saving appliances are not a luxury but an actual necessity—conditions have made it so.

Progressive ceramic plants of all kinds have been brought face to face with this situation, with the result that numerous improvements and betterments have been, the order of the day. In this, the enterprising wall and floor tile works is no exception to the rule, and large investments have been made by many such plants to modernize production in every possible way. The results of this activity show clearly in the accomplishments and current developments, and more than usual interest is attached to the privilege of seeing, first-hand, just what is being done. In truth, it seems but a beginning to still bigger things and no one can prophesy, with any degree of accuracy, what will take place for still greater efficiency in the days to come.

Among the important ceramic plants which have kept pace

with the trend of the times is that of the Robertson Art Tile Co., at Morrisville, Pa. This place is on the Delaware River, just across from Trenton, N. J., and with such close proximity, it is practically a part of this great pottery and clay-working center.

The plant occupies a fine site on the main line of the Pennsylvania Railroad, with excellent facilities for shipping, both by rail and water. The production is devoted to wall, floor and fire-place tile, and these of highest grade only. A view of one of the main buildings at this works is shown in the accompanying illustration.

This tile plant is fully equipped in all departments of operation, with improved facilities for the manufacture from the handling of the raw materials to finished product, packing and shipment. Every effort has been made to provide the best working conditions and environment for employes, and in view of the fact that all sections of the plant are not new, much has been accomplished in this connection. Since the time of organization, around 1890, numerous additions have been made to allow for expansion in all departments, and in this extension work, the general layout has been materially enhanced; considerable credit is due for the uniformity as developed for plant procedure.

GENERAL OPERATING DEPARTMENTS

In general plan of operation, the Morrisville works closely parallels other ceramic plants of this character. Effective facilities are provided for raw material storage and handling, and a large stock of body, finish and sagger clays is maintained. The clay drying department is located on the third floor of the clay storage building and is thoroughly equipped to handle extensive quantities of material. The clays are removed to this point by elevator.

The company makes its own saggars. The sagger-making department is provided with a complete line of modern equipment, including grinding and mixing machinery, presses, etc. The sagger presses, of which two are installed, are of hydraulic-operated type; the clay mixture is ground and pugged once before using in the machine. The hydraulic operation allows for high and low pressure action, the block moving upwards under the low pressure, with the high pressure applied on the downward stroke to form the sagger. Fine saggars are being produced at the plant, with good wearing qualities under numerous kiln firings.

The filter press department consists of square form apparatus of standard type, Crossley manufacture. These machines are effective for the separation of the solid matter from the liquid, with recovery of such material in ready form for drying and handling. The recess filter plates are arranged on steel side bars, with clamps for holding the filter cloths in position.

The plant has a total of ten kilns, these being operated in units as required. Instead of loading the kilns by hand labor, the company employs a portable loading machine of Brown type; this is placed at the door of the kiln, loaded by men at this point, with the saggars removed from the

Uniform Drying in Less Time

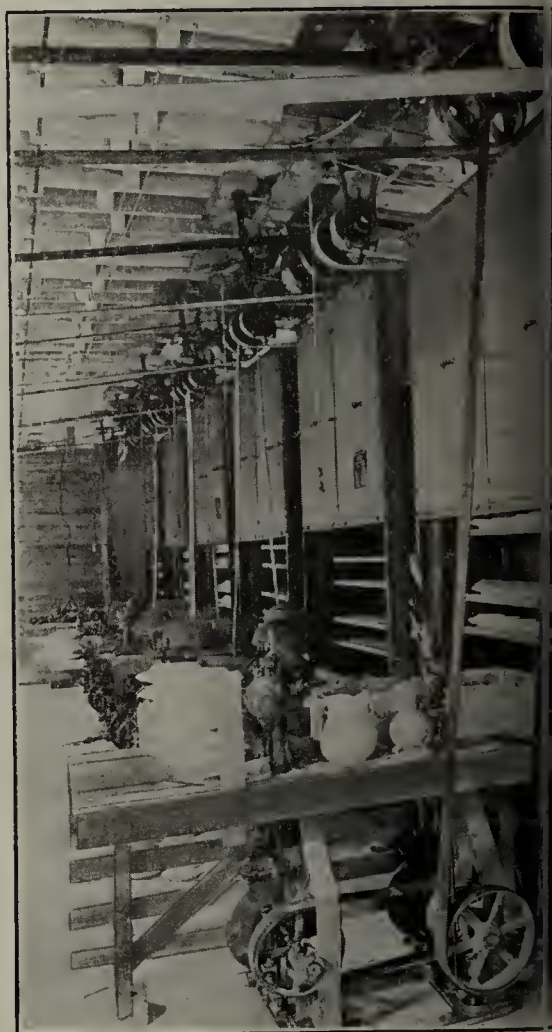
accomplished with practically no loss of material

"Hurricane" Automatic Stove Rooms and Mangles

The desire of every clay manufacturer is to dry his ware in less time, and to put it in the best possible condition before it goes to the kiln.

"Hurricane" Automatic Stove Rooms and Mangles are provided with special means of recirculating and distributing the heated air. That all operations of the ware receive the same uniform treatment is evidenced in the accompanying letter from Mr. W. J. Rea, who after operating the machine, says: "We are convinced that this system will eliminate one of our greatest obstacles to rapid production,—quick and safe drying."

The "Hurricane" Automatic Stove Room also reduces very considerably the number of moulds. By occupying less floor space, it allows room for other important operations, as well as being a great labor-saver. The machines are "fool proof" and easily operated. Fire-proof, steel construction—no fire risk.

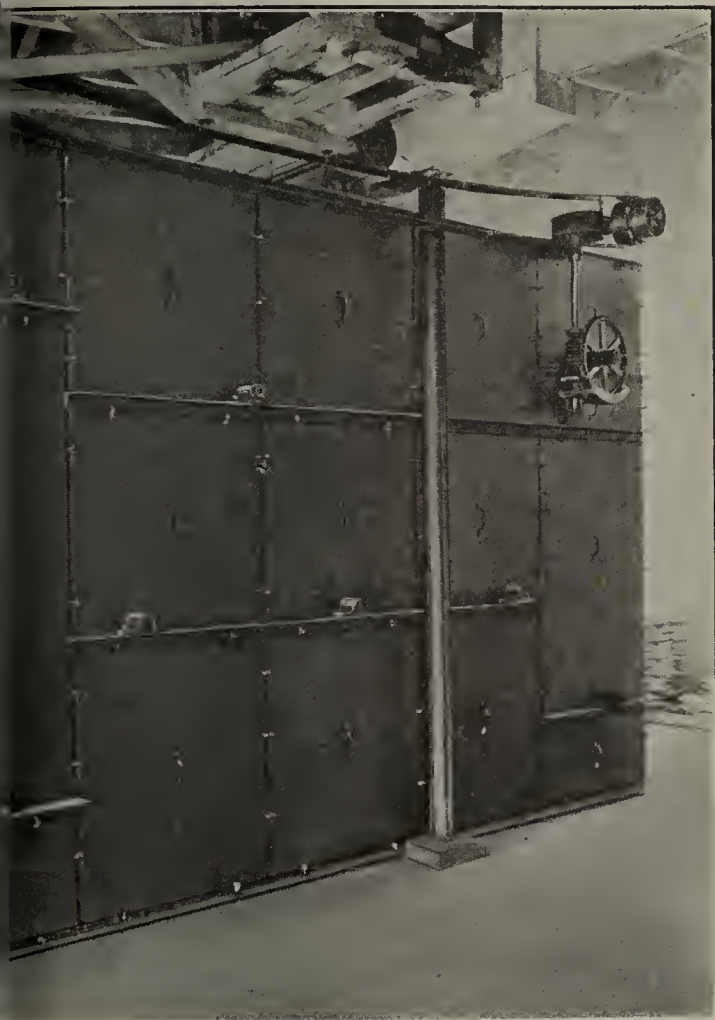


We design and build Conditioning Machinery. Our engineers and our specifications have proven to be the best for the purpose. We furnish complete Systems, according to

The Philadelphia Drying Machine

Time

S



Installation of Six "Hurricane" Automatic Stove Rooms Showing Feed End.

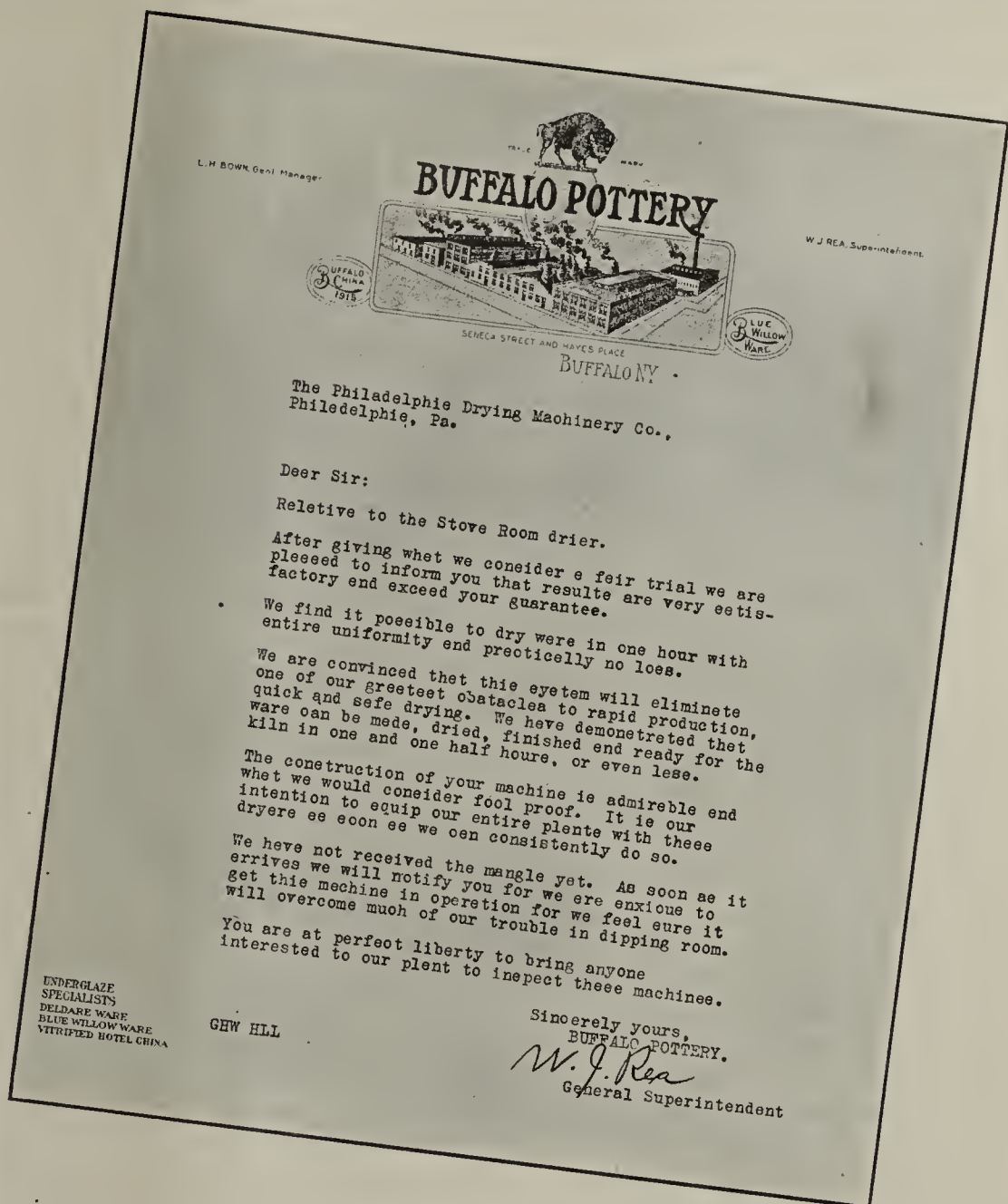
es, Stove Rooms and
t individual require-
conditions carefully,
d on what experience
most economical for
Automatic or Truck
nents.

We are furnishing our machinery to the largest and best equipped plants throughout the country. It may benefit you to learn what savings could be effected in your plant. Inquiries cost you nothing. Send us your problems and let us see if we cannot help you, as we have helped others.

y Co.

Stokley above
Westmoreland

Philadelphia, Pa.



loader by a man stationed at the kiln door, about 7 or 8 ft. above the floor level. It requires from four to five men to load a kiln rapidly and effectively in this manner, including all features of the work, and the time of operation is materially lessened. Two of these portable loading machines are in service at the plant.



View of One of the Factory Structures of the Robertson Art Tile Co., Morrisville, Pa.

The company has devised its own sand-screening machine, and this is not only novel, but decidedly efficient. This machine stands on the floor with convenient height for hand-feeding, and total length of about 6 ft. It consists of a revolving drum which leads to a cylinder formed of wire, with spacing between the wires sufficient to allow the floor tile to drop thru. This cylinder, rotating, separates the tile, which fall on a flat, horizontal screen and thence into containers on the floor. The contents of a single sagger are poured into the revolving drum, the tile working their way out to the wire cylinder, as will be understood. Where the small tile adhere to one another and are not separated by the action of the cylinder, they work their way automatically to the end of this cylinder, being too large to fall thru the wire to the screen, and drop out into another container located at his end of the machine. This plan saves labor and trouble, and is a big improvement over other general machines without such provision. This screening machine is operated by a belt drive from an overhead countershaft.

In the tile making department, a large battery of presses is operated by means of hydraulic power, making for a considerable saving in labor and hard work; each press is under individual control. The loose clay mixture is handled in a form and fed to the press by a single operative; a convenient hand lever is arranged for the hydraulic power. The upper press block comes down slowly on the bed, or under the low pressure, and the high pressure is then applied to form the tile. These presses have proved so efficient that arrangements have been made for the installation of other such machines at an early date. A number of regular type, hand-operated tile presses, with screw-block, are also in service at the works.

In the hydraulic power department there are two large accumulators, one for low pressure service and the other for high pressure. Electric equipment with motor drive is arranged wherever possible, allowing utmost facility in the operation of the different clay-working and tile machinery.

MISCELLANEOUS DEPARTMENTS

Other departments include a complete machine shop, equipped with planer, shaper, drill press, lathes and numerous other machine and hand tools. This shop is used for all die work and other metal-working operations, as well as for general repairs. A fireproof vault is provided in a convenient location for die storage.

An interesting laboratory is installed at the plant on the

main floor for testing and experimental work. This department is equipped with a complete pottery machine, crusher for breaking tests, laboratory filter press for washing small quantities of clay, precision scales and other miscellaneous apparatus. Every facility is provided for carrying out experiments to the desired point.

On a balcony floor, overlooking the assembling and general works departments, a drafting room, for designing and general layout work has been arranged. This room is provided with good lighting facilities, and is in an admirable location.

Finely appointed stock and shipping departments have been installed. The stock room is arranged with bins for the storage of tile of different shapes and sizes, altho there is little opportunity these days to accumulate any amount of stock. The shipping department is conveniently situated and equipped with modern facilities.

This plant has a capacity of about one and a half million tile per year, including both wall and floor tile, and the latter of different shapes and patterns in various colors, as square, hexagonal, octagonal, etc. At the present time employment is being given to about 150 persons. A. D. Forst is president and treasurer of the company; Everett Townsend, general manager, is in direct charge of plant management and general production. T. R. Cheyney is secretary.

In passing, it is interesting to note that the eastern representative of *Brick and Clay Record* had the pleasure of making a little visit to this plant with a number of prominent clay men of New Jersey.



Imports and Exports of Pottery

Opinion is general among generalware pottery manufacturers of the United States that at the present rate foreign pottery and china is being imported it will be many years before it will have any effect upon the production and demand for the American lines. For the first time since the great war, china products of German manufacture were received in the United States last August, when shipments valued at \$11,807 were received. The bulk of these goods, it is said, were purchased by American importers before the United States became involved in the war and were held up at foreign shipping points until this summer and after the Peace Conference. There has been a marked increase in the importation of French wares, this increasing from a valuation of \$8,755 in August, 1918, to \$147,583 in August last, which is the most recent data obtainable here by American manufacturers. There has been a marked falling off in the importation of wares from England, the valuation of imported ware from that country in August 1918 being \$54,844 and in August, 1919, it declined to a low record of \$20,353. There has also been a falling off in the imports of wares from Japan, but even so that country now holds the record of being the largest shipper of wares into the United States. In August, 1918, Japan exported china to this country to the value of \$189,801, but in August last this declined to a low mark of \$121,174, and for nine months ending in October its bill to American customers was \$993,635, this, however, including all classes of plain white and decorated wares from that country. The total consumption of imported pottery and china for the first nine months of the fiscal year had totaled \$4,077,393 as against \$4,399,523 for the same fiscal period in 1918. This amount is quite below the record for the same term in 1917 when a valuation of imported wares for the similar period was reported at \$4,173,295. American pottery manufacturers during the first nine months of the current fiscal year exported ware to the

value of \$839,217 for dinnerware products and \$385,186 for sanitary pottery. These amounts are far higher than ever before recorded by statisticians, and shows that the demand for American wares abroad is rapidly increasing.

With an advancing demand within the country for American pottery and the export requirements growing, domestic manufacturers of both generalware and sanitary pottery products have been handling more business than ever before in the history of the trade, so far as valuations are concerned. The domestic demand for generalware now is such that the capacity of all plants in that line are taxed to their capacity, and this fact is known among buyers who have come to realize that in order to obtain merchandise they are compelled to anticipate their requirements, months in advance.

It is the general opinion of the manufacturers now that no spot business can be accepted, except where a few odd lots of ware may be accumulated. This would indicate that the manufacturers are sold up for current delivery, but at the same time they are being crowded with orders for shipment during the first six months of the new year. Never before have the American pottery manufacturers had such a large volume of future business on file as is now in evidence. Should it be possible for the manufacturers to obtain capacity of production the situation would not be so crowded as it is at present, but various factors have entered into the plant managements that possible production has not been possible.

The open weather now being experienced is going a long ways toward relieving the manufacturing situation. During severe cold weather pottery plants using gas to fire their kilns are generally held up by the fuel companies who prohibit the lighting of kilns. In some instances in the past kilns have been off for a week or more at a time before resuming normal schedules. Such a condition delays production and holds up shipping. As long as open weather continues a happy situation in the manufacturing plants exists. Those potteries which use coal for fuel in kiln have been greatly relieved since the miners have been ordered back to work. Some of these manufacturers only had a few weeks' supply of coal available for kiln firing at the time "return to work" order was issued from Indianapolis. A steady supply of coal is now expected to be received by these pottery manufacturers thru their regular channels.

During the last two months, however, the American pottery manufacturers have been enabled to break previous monthly shipping records. Because of the amicable feeling existing between the employers and the officials of the National Brotherhood of Operative Potters, the pottery workers are now enabled to receive a greater return for their efforts than in former years. Inasmuch as production has been increased, the employe has been benefited and the consuming trade has been receiving its merchandise as quickly as possible. No labor strife exists within the pottery industry, and there has been no general strike in the trade for over a decade. The harmonious feeling existing now between the pottery manufacturers and the employes is most pronounced.

The manner in which buyers are visiting the pottery manufacturing districts indicates the urgent requirements of the trade. In former years the buyers came into the market about twice a year and many of them only once, and that in January. This year, however, has been an exception to the rule, as there has been a steady run of buyers monthly. Many are visiting the district quarterly, others are making their visits to the plants with even greater frequency. On these trips not only are back or-

ders being looked after but additional new business is almost always placed.

In several instances pottery manufacturers are arranging to increase kiln capacity for 1920, either by the erection of new glost or bisque kilns or additional decorating kilns. When these additions are completed, the manufacturers will be in a position to show a larger valuation of production in 1920 than the new high records of the current year. There is a growing demand for pottery workers, and none need remain idle who desire employment. With several new plants to be placed in operation early next year there will be a still further demand for this class of skilled labor.



Insurance For Potters

The Sanitary Potters Association, thru its secretary, George G. Dyer, Trenton, N. J., has announced that the Prudential Insurance Co. has made certain revisions in its regulations regarding insurance for potters. The company has made dippers and dipper helpers eligible for insurance, having heretofore declined risks of this nature. The present rating as well as the former rating for men engaged in the various features of pottery production, is shown in the following tabulation:

OCCUPATION	PRESENT RATING	FORMER RATING
Casters	Regular	Regular
Decorators	Regular	Regular
Dippers and Dipper helpers	Medium	Declined
Filers-in	Regular	Regular
Handlers	Regular	Regular
Jiggerman	Regular	Regular
Jiggerman's Finishers (Fettlers)	Medium	Medium
Jollymen	Regular	Regular
Kilnmen (Placers or Drawers)	Medium	Medium
Modelers and Mould Makers	Special	Medium
Odd Men	Medium	Medium
Packers and Shippers	Regular	Regular
Pressers	Regular	Regular
Printers	Regular	Regular
Saggermakers	Regular	Medium
Slip Makers	Medium	Medium
Pug-Mill Workers	Special	Medium
Throwers	Regular	Regular
Turners	Regular	Regular

The lines which are still declined are: Flint Mill Workers; Ground Layers; Glaze Makers; Scourers; Sand Blasters, and Sweepers.



Generalware Production Shows Increase

Production in the generalware pottery plants of the United States has shown an increase during the last two months. This is due to two reasons, one is that more folk have returned to the trade—those who left the industry during the war period to take other positions, and the forces now employed are, in a general way reported to be giving better effort to their tasks. There has been a shortage of generalware during the last spring and summer because of low production and increased orders, strikes here and there and other causes entering into the situation. For the present, however, conditions are pronounced rather favorable by manufacturers for a more steady production. The one factor that looms rather large on the horizon that may hinder continued steady production is the fuel situation. The ma-

jority of the generalware potteries in the East Liverpool, Ohio, district use gas for fuel, but cold weather is likely to cause a shortage in the supply for manufacturing purposes this season as it has in past years. This would cause a loss in kiln production, as the manufacturers are not then in a position to fire kilns in regular order. In turn this would lessen production in other departments of the potteries, as in this industry one department depends upon the other. Where coal is used for kiln firing, those manufacturers for the present have rather favorable supplies on hand, but even this supply would only be sufficient for a month's work at least. The manufacturers, however, are in a hopeful mood that production will continue along favorable lines thruout the winter. The general demand for their product is such that operations are assured for from three to nine months ahead even if no new business was received in the meantime. Heavy future business is being booked almost daily by all pottery manufacturers, both by mail and thru personal visits of buyers of jobbing and department store interests. Practically all business being taken by the manufacturers today is for the first quarter delivery in 1920, rarely an order being accepted for shipment this year. The volume of unfilled business now on file in all pottery offices is very heavy, it being far more than could be possibly shipped this year, even should all generalware potteries work to 100 per cent. capacity schedules.



Metal Specialties Now Reproduced in Clay

Development in the manufacturing of items in general use in the fitting of bathrooms and home kitchens from vitreous china has been more pronounced this year than ever before. Many of these specialties which were only to be had in metals heretofore are now being made by some pottery manufacturers, and as a result a new line of business has been opened to the ceramic industry. It is conceded by the buyers of these particular lines that the development and expansion of such a line of products has not got even rightly started, so wide is the variety of items possible to be made in vitreous pottery, which have heretofore been confined exclusively to the metal trades. This new line of pottery products is following closely in the advanced use of sanitary pottery specialties. There is hardly any item used in the bathroom, now made of metal that cannot be reproduced in clay. It has been pointed out by assemblers and jobbers in these lines that the general buying public is now seeking the most modern sanitary appliance possible to obtain, with the result the pottery manufacturer is now in a position to increase the general line of ceramic specialties.



The Stockbridge Pottery, a new industry at Stockbridge, Mass., reports a big demand for its output, consisting mainly of articles suitable for holiday gifts. Thirty persons are employed at the pottery and are unable to produce goods fast enough to meet the demand.



Many pottery manufacturers fearing a shortage of gas and also in lieu of the threatened coal strike have been laying in large amounts of coal. This is similar to a condition which existed two years ago when "mountains" of coal were stored by the pottery manufacturers in the upper Ohio Valley. The railroads for many weeks have been taking all coal carrying cars possible to the mining districts, and this has delayed the shipping of other products in open cars. The pottery manufacturers in many instances will continue to store up coal as long as possible in order that they will be protected during the winter season.

The Novelty Clay Forming Co., at East Palestine, Ohio, is making a number of improvements to its plant with a view of increasing capacity. This firm was formerly located in the East Liverpool district, and removed to East Palestine in order to obtain larger quarters. The company is under the management of Fred Owen, who has added a number of specialties to the line of the plant since its removal to East Palestine.



It is possible that the idle two-kiln pottery plant in Newell, W. Va., will be taken over soon by new interests and placed in operation. Negotiations are now pending with this end in view. The kilns in this plant are small in size and not suitable to the manufacturing of generalware. Should the property be placed on the active list, the last of all idle clayworking plants in the Upper Ohio Valley will be in operation.



Construction of the tunnel kilns that will be used by the Pittsburgh-American China Co., at its new plant at Greensburg, Pa., has been started by the Gamble & Bryan Co., of East Liverpool, O., which firm has been awarded rights for the erection of this kiln thruout the eastern territory. This kiln is from the J. B. Owens design, and was first used successfully in the Zanesville, Ohio, district where Mr. Owens is extensively identified with the tile and pottery industry. One of the five kilns will be for decorated ware while the others will be for glost and bisque ware. The construction of these kilns will require several months' time. The plant, however, will not be ready for operation until early next year.



K. P. Snyder, of the Louisville Potteries Co., in discussing conditions said: "Our business is lightening up materially, but we have had a good year. Florists purchased flower pots freely, and there was a good demand for jugs and jars during the summer, amateur brewers and wine makers being responsible for much of this demand. General jug trade has been off on smaller sizes and fruit crop failure held down the jar demand. If prohibition opens up for a short time this fall the jug manufacturers won't be able to supply the demand."



The Eagle Porcelain Co., Inc., Queens, N. Y., has been incorporated with a capital of \$10,000 to manufacture porcelain products, including doll heads. The incorporators are J. S., P. B. and S. Danziger, 960 McKibben Street, Brooklyn.



The plant of the old Fidelity Pottery Co., Prince Street, Trenton, N. J., has been acquired by Fay, Miller & Youngs, Inc., New York, with plant at Barberton, Ohio, which will use the establishment for other character of production. The plant comprises three buildings, with aggregate floor space of about 50,000 sq. ft. The company is planning to remove its Barberton works to the new location, and will give employment to about 100 persons.



A decided improvement has been reported in the box car situation and this has permitted pottery manufacturers more freedom in shipping carlots of ceramic products. Such cars are being rolled thru to destination on quicker schedules, but some less than carlot shipments are not making as good time as desired on account of delays here and there at transfer points.

The SUPERINTENDENT

Helpful Hints for Practical Men
Whose Problem is Maximum
Production With Minimum Cost

Producer Gas Costs

The following table of producer gas costs published by the Steere Engineering Co., Detroit, includes fuel, power, repairs and maintenance, labor and supervision, interest and depreciation; in fact, every item of cost except the interest and taxes on the land occupied.

Costs at Which Other Fuels Must Be Bought to Obtain the Same Number of B.t.u. as When Buying Producer Gas With Coal at the Price Given											
Producer Gas Costs per 1,000 Cu. Ft. for Coal Costs Given		Natural Gas per 1,000 Cu. Ft.		Fuel Oil per Gallon		Coal Gas or Carburetted Water Gas per 1,000 Cu. Ft.		Blue Gas per 1,000 Cu. Ft.			
Cost of One Ton of Coal at Plant	Hot Raw Producer Gas at Offtake	Clean Cold Producer Gas	Hot Raw Gas	Clean Cold Gas	Hot Raw Gas	Clean Cold Gas	Hot Raw Gas	Clean Cold Gas	Hot Raw Gas	Clean Cold Gas	
\$2.00	3.13c	4.15c	23.7c	31.5c	2.91c	3.86c	12.6c	16.72c	6.45c	8.59c	
2.50	3.55	4.57	26.9	34.67	3.3	4.25	14.3	18.40	7.34	9.45	
3.00	3.96	4.98	30.1	37.84	3.69	4.64	16.6	20.09	8.20	10.32	
3.50	4.38	5.40	33.3	41.01	4.08	5.03	17.65	21.77	9.07	11.18	
4.00	4.79	5.82	36.3	44.18	4.46	5.42	19.3	23.45	9.92	12.05	
4.50	5.21	6.24	39.5	47.35	4.85	5.81	21.0	25.13	10.78	12.91	
5.00	5.63	6.66	42.7	50.52	5.24	6.20	22.7	26.82	11.65	13.78	
5.50	6.05	7.08	45.9	53.69	5.63	6.59	24.35	28.50	12.5	14.64	
6.00	6.46	7.49	49.1	56.85	6.01	6.97	26.0	30.18	13.36	15.50	

HEATING VALUES USED

Producer gas	145 B.t.u. per cu. ft.
Natural gas	1,100 B.t.u. per cu. ft.
Fuel oil	135,000 B.t.u. per gallon
Coal gas or carburetted water gas.....	585 B.t.u. per cu. ft.
Blue gas	300 B.t.u. per cu. ft.

These costs are based on the plant operating with a 100 per cent. load factor, that is, operating at rated capacity 24 hours per day, 365 days per year. Comparatively few plants have a 100 per cent. load factor, and therefore it is necessary to take this very important point into consideration when estimating the cost of gas.

The cost of producer gas, with a reasonable degree of accuracy, may be estimated for any load factor by applying the formula:

$$C=T+\left[\left(\frac{R\times 400}{A\times B}\right)-2.38\right]$$

Where

C=Cost of producer gas per thousand cu. ft. under conditions specified

A=Number of feet of gas used per day

B=Days per week plant is in operation.

T=Cost figures shown in table at 100 per cent. load factor

R=Rated hourly capacity of plant in cubic feet

It also must be kept in mind that furnace efficiencies have a very great bearing on the cost of the finished product. Without regeneration or recuperation producer gas cannot be used as efficiently as the more concentrated fuels. The expense of the distribution system and the furnaces also have an important bearing on the total cost of doing the work.

More Data on Attaching Hose Couplings

On page 691 of the October 7 issue of *Brick and Clay Record* a method for attaching hose couplings is given in which the coupling is heated to a red heat and then thrust into the hose. It is claimed for this method that the heat will vulcanize the rubber to the coupling. However, H. C. Paddock, of the mechanical sales department of the B. F. Goodrich Rubber Co., Akron, Ohio, states:

"Altho couplings may hold when applied in this manner, it is because of the clamps and not because of the method of attaching. Up to a certain temperature heat has the effect of vulcanizing, or hardening rubber, and beyond that point it causes it to burn. Everyone is familiar with the burnt surface of a rubber band, which is sticky, but will not dry. It must be apparent then that couplings attached by this method are not vulcanized to the hose, but that the softening of the rubber so accomplished really serves as a lubricant to make the insertion of the coupling easier."

"From a standpoint of service this practice is highly injurious in that it shortens the life of the rubber tube, permitting the liquid which the hose conducts to reach the fabric, thus causing it to decay and materially shortening the life of the hose."

"Results equally as effective and not injurious can be secured by attaching couplings in the following manner:

"Remove all burrs or sharp points from the stem of the coupling or nipple. Round off the end of the stem so as not to cut the tube. Place the couplings in a vice, coat the shank with rubber cement, shellac, or soap (do not use oil) and then draw the hose over the shank and apply the clamps. The shank should fit the hose rather tightly—not so tightly as to rupture the tube when it is inserted, nor so loosely that the tube will be wrinkled when the clamps are tightened. Never cut away any portion of the tube in order to make the shank fit, but rather turn the shank down on a lathe, or secure a new fitting. By cutting the tube or allowing it to become injured, the element which the hose is to carry is afforded an opportunity to get to the fabric sooner, thus resulting in a shortened life to the hose."

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Chelsea Company Using Tunnel Kiln

Manufacturing of ware at the new plant of the Chelsea China Co., at New Cumberland, W. Va., is expected to commence this month, and if so, shipping of the product will be possible on or about December 1. The plant is controlled by New Cumberland and Wheeling interests, and will manufacture an exclusive line of vitreous hotel china. Only plain white will be marketed for the present, but a little later a line of decorated ware will be offered the trade. The company has a favorable amount of business on hand, and it is also the first pottery company in West Virginia to make use of the tunnel kiln. This kiln is now being used for sagger firing and has been found to give excellent results.

IN *the* WAKE *of the* NEWS

Being a Brief Mention of a Host of Interesting Happenings in the Varied Fields of the Clayworking Industry

Miss Snyder on Road to Recovery

Many in the face brick industry will be glad to learn that Miss Emma Jane Snyder, secretary to the live-wire secretary of the Face Brick Dealers' Association of America, Mr. Montgomery, is on the high road to complete recovery, having undergone a major operation at the Hahnemann Hospital in Chicago about three weeks ago. Miss Snyder has fond hopes of being back at her desk within the next fortnight. Previous to her connection with the Face Brick Dealers' Association of America, Miss Snyder served for six years as secretary to R. D. T. Hollowell, secretary of the American Face Brick Association, having resigned to become Mr. Montgomery's secretary in September of this year.

Another Howington in Coral Ridge Company

Thomas E. Howington, a brother of James Howington, of the Coral Ridge Clay Products Co., Louisville, Ky., who was recently mustered out of service, joined that company, and is connected with the sales department, thereby relieving James Howington of a considerable amount of work. James Howington in discussing business said: "We are very busy and getting all the business we can handle. There is a heavy local demand and a good demand from out in the state, farmers being active buyers this year."

Pottery Man Pushing Civic Matters

George E. Hoffman, secretary of the Monument Pottery Co., Trenton, N. J., is active in the drive now under way for new members for the local Chamber of Commerce. Mr. Hoffman is chairman of the membership committee, and a strong "booster" for the cause. This activity is for the purpose of promoting Greater Trenton to bring about proposed improvements and betterments, as well as accentuate other civic matters.

Hugh McNicol Elected Bank Director

Hugh L. McNicol, vice-president of the D. E. McNicol Pottery Co., of East Liverpool, Ohio, and Clarksburg, W. Va. has been elected a member of the board of directors of the Citizens National Bank of East Liverpool, vice Robert Burford, deceased. Mr. McNicol is one of the youngest bank directors in Eastern Ohio, and at the same time is considered one of the keenest of the younger pottery operators.

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William C. Koch, of St. Paul, Minn., president of the Twin City Brick Co., was married at Cambridge, Mass., on October 24 to Miss Margaret W. Paine. Mr. Koch is a graduate of Harvard. During the war he was connected with the War Industries Board at Washington. His wife is a graduate of Smith College and served during the war at the Camp Upton base hospital.

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Harry Cramer, of the Lexington (Ky.) Brick Co., was a recent visitor in Louisville.

High to Work at Taylor Station Plant

C. W. High, who has been connected with Jennings & Lawrence, civil engineers of Columbus, has resigned to accept a position as civil engineer for the Franklin Brick & Tile Co., which operates a large common brick plant at Taylor Station, just east of Columbus. The concern is doubling the capacity of its plant by the erection of a large addition.

Brick Made of Douglas Clay on Display

A brick manufacturing plant for Douglas, Arizona, is said to be a certainty now. An excellent deposit of clay has been found obtainable about thirty miles from Douglas and a company has been formed which will build a plant and commence operations as soon as possible. The company was recently incorporated with Dr. M. L. Downs, president; D. N. Darling, vice-president and C. E. Baudisch secretary and treasurer. Mr. Baudisch is largely responsible for the new industry for it was he, who several months ago, came to Douglas with a wide knowledge of the clay industry and recognized the possibilities of the Douglas deposit. Samples of the clay found there were sent to a plant in South Carolina, where they were made into brick which are now on display in Douglas.

Many Millions to be Spent in Building

According to all reports from local offices, business in the brick and other clay products trades is steadily improving in California. The construction work now going on is of a character which calls for generous quantities of brick and building materials of allied industries, and in addition to present conditions, those in the "know," state that future prospects are particularly bright. It is estimated that many millions of dollars will be spent in 1920 in building activities of all descriptions; and naturally the brick man can legitimately expect a generous share of the business resulting.

While San Francisco firms have found deliveries just about double in cost since the strike of the longshoremen and teamsters, the situation is more than stabilized by the betterment of labor conditions in the factories. With over 60,000 men out of work as a result of the ship builders' strike, it is no longer necessary for the brick manufacturer to get down on his knees to a prospective workman and promise all his worldly goods, if the kind man will please come to work for him. At the present time, the brick worker can earn a fair living wage, but he is hardly in a position to dictate in the extreme fashion of the past months. There are still complaints in regard to highly efficient workmen. The men now employed, have in a large majority, worked at other trades, but even with this handicap the situation is greatly improved.

Business in that part of the state covered by the San Joaquin and Sacramento valleys is in excellent shape, according to word received in San Francisco, and the year 1920 bids fair to be one of the best experienced by the clay industry since before the war.

Opens Up New Service Yard

A service yard has been opened at 7th and Hooper streets, San Francisco, by the California Brick Co. and the Livermore Fire Brick Works. A stock of the following products will be carried: vitrified paving brick, sewer brick, step and walk brick, red ruffled brick, red pressed brick, common brick, partition tile, hollow building tile, fire brick flue lining, ground fire clay, brick dust, fire tile, enameled brick, buff brick and old gold brick. In addition to this list architectural terra cotta will be obtainable on orders.

Rushed, and Working Full Capacity

The factory of the Port Costa (Cal.) Brick Co. as well as that of the Richmond (Cal.) Pressed Brick Works is working at full capacity, with many advance orders on file. The managements of both these plants have remarked concerning the improvement of labor conditions and state that it is much easier to secure men since the shipbuilders' strike. Being situated right in the midst of the strike locality they were among the first to notice the change.



The Livermore (Cal.) Fire Brick Co. now has a force of men at work at the plant making extensions and improvements, which when completed, will double its capacity. It is expected that with the beginning of spring operations in 1920, the working force will also be doubled.

Delaware Operations Continue Apace

The building situation at Wilmington, Del., continues along at a normal clip, with a number of bright spots. Things are coming around in a very substantial manner, and during the past fortnight a number of interesting and important operations have come to light. Plans have been filed for the erection of a new thirteen-story office building on Market Street, with extension on King Street, fifteen stories high; the structure will be of brick and stone, fireproof and is estimated to cost \$1,224,000; it will be erected by Alfred I. duPont. White & Co., 216 North Broad Street, Philadelphia, Pa., are taking bids for the erection of a new one-story, brick automobile service station, 90x150 ft., to be located at Thirty-first and Market Street, Wilmington, to cost about \$75,000. The Wilmington Saving Fund Society is having plans prepared for the construction of a new one and four-story, bank and office building at Ninth and Market Streets, of brick and fireproof construction.

Brick in the Lead in Wilmington District

There is an encouraging call for important building materials in the Wilmington, Del., district, with brick well in the lead among fireproof products. Good hard common brick is now being quoted at \$20 and \$21 per thousand, delivered, with some dealers asking as high as \$22. There is not an over-abundance of stock in this section and with a continuance of building at the present status, it is possible that a little shortage will be evidenced in the winter months to come. Fire brick is operating under a fair call, with price range from \$65 to \$68. Other burned clay products, such as sewer pipe, hollow tile, drain tile and the like are in popular demand. Face brick is going along in good style, with from \$40 to \$50 asked for best selections.

"Build Now" Movement Creating Activity

A "Build Now" movement is under way at Wilmington, Del., as well as in other parts of the state, and this is having a splendid effect in creating additional interest and ac-

tivity. At Milford, the Milford Civic Improvement and Home Building Association has been organized with a capital of \$100,000 to advance the cause in this section. Plans are under way by the association for the erection of a number of dwellings, and every effort is to be made to have these ready for occupancy by the early part of the year. G. Layton Grier is president, and William V. Sipple, Jr., treasurer of the new organization.

Macomb Company Buys Rushville Tile Plant

The tile plant which has been operated for a number of years near Rushville, Ill., by the Nicholson Clay Manufacturing Co., has been purchased for \$28,000 by the Macomb Sewer Pipe Works, of Macomb, Ill.



The Northwestern Terra Cotta Co., 2525 Clybourn Avenue, Chicago, Ill., is building a three-story brick factory addition to its plant.

Old Lafferty Plant to Be Sold

Clay City, Ind., will in all probability have a large clay plant soon. A representative of a \$100,000 corporation is considering the purchase of Irvin Smith's clay plant. The owners now hold \$30,000 worth of stock and propose to issue \$30,000 worth of stock and retain \$40,000 to sell at some future time. The plant which they propose to buy is better known as the old Lafferty plant. A committee consisting of H. E. Sutton and James L. Burns has been appointed by the Commercial Club to look up the financial standing of the new company and the business ability of the company's personnel.

Cannelton Company Adds to Lines

Fire brick has been added to the line of products of the Cannelton Sewer Pipe Co., of Cannelton, Ind., the brick being adapted to temperatures of and up to 2,800 degrees. Grate tile and ground fire clay are also now being marketed by this company.

Buys Brick Plant at Veedersburg

The Bloomfield (Ind.) Brick Co. has purchased the brick plant at Veedersburg, Ind., which will be conducted by the management of the Bloomfield plant.

Kansas Roofing Tile Plant Busy

The Ludowici-Celadon Co., at Coffeyville, Kans., of which L. C. Nelson is superintendent, is extremely busy with orders at the present time. One of the chief difficulties met at this plant is the maintaining of a sufficient crew of workmen to turn out the production. About 135 men are required on the payroll in order to maintain a working force of 110, which is required to turn out the daily capacity. The kilns at this plant are fired with natural gas, but the supply of gas is becoming very scarce of late and it will not be very many years before a substitute will have to be found.

To Construct New Down-Draft Kilns

Business is very good at the Union Brick Co., Iola, Kans., of which W. S. Hurlock is superintendent. This plant is equipped with two Hoffman coal-fired continuous kilns of sixteen chambers each. There are also two round down-draft kilns on this plant which are used to burn

face brick in, and it is expected to construct a few more in the very near future. The present production of this plant is one and one-half million brick per month.

Mishap Causes Plant to Shut Down

A mishap occurred at the Coffeyville (Kans.) Vitrified Brick & Tile Co., which caused the shut-down of the plant for several days, when the pugmill broke into ten parts. One of the knives broke off the shaft and was responsible for the damage to the machinery. It is planned to weld these parts together again after which the machinery will be reinstalled.

To Improve Hollow Tile Plant

The Coffeyville (Kans.) Shale Products Co., is contemplating the construction of a new building for housing its machine room, according to L. A. Florea, superintendent. This plant has been very busy thruout the present season manufacturing Exner tile for which there has been a very good demand.

Coffeyville Plant Shut Down

The Denison Clay Co., whose plant lies off the outskirts of Coffeyville, Kans., is shut down at present for the first time in five years. The laborers on the plant are busy making repairs and remodeling.

Louisville Plants Rushed With Orders But Feel Coal Shortage

Reports received from a large number of the brick and tile manufacturers of the Louisville district are to the effect that they are rushed with business, fall building being very active, while the demand for brick is running extremely heavy. The fire brick manufacturers and pottery people are also finding business to their liking. The principal drawback at the present time is the coal strike and shortage of fuel. A number of plants are affected by the coal shortage at the present time.

The plants of the P. Bannon Pipe Co. have been down for several days, fires being kept going under kilns that had been started, but brick, tile, sewer pipe and other stock has not been made. However, the company has been assured that coal in transit would be delivered to it shortly, this coal being held in local yards by the United States Railroad Administration.

The Southern Brick & Tile Co. reported that it was going ahead and placing green brick in its kiln, with hopes of getting coal to operate its gas producer system and eventually burn the brick. Mr. Bishop stated that three cars of coal in Louisville yards were being held, but that he had started machinery moving and expected to get the coal. He stated that green brick now made would have to be burned within thirty to forty-five days or they would spoil in the kilns, and have to be removed.

K. P. Snyder, of the Louisville Potteries Co., stated that he had a little coal, but had a couple of cars of West Virginia coal in the yards, and had taken the matter up with the Louisville & Nashville Railroad, and been assured that the policy of the United States Railroad Administration would not check industry, and that those actually needing coal in manufacturing would be taken care of. Mr. Snyder went to the Louisville & Nashville offices and signed up certain papers showing coal on hand, and amount required, and believes he will get his coal shortly.

However, producing companies are not taking any new business just now as they are oversold and demand on such companies as are operating their mines is so keen that the brick men have not any idea of when they will be able to secure fresh supplies.

Andrew Hillenbrand, Jr., of the Progress Pressed Brick Co., said: "We have enough coal on hand, 500 tons, to run us until about Christmas, when we will make a shut-down for repairs. Business is so good that if we can get coal we will only be down about two weeks. Incidentally I wish to thank you for tipping me off to the fact that a coal strike as well as coal shortage and higher prices were coming. We made a few investigations and found that you had the right dope, and bought accordingly, and had the coal in our yard when the trouble started."

James Howington, of the Coral Ridge Clay Products Co., saw what was coming and laid in enough coal to keep him going for sixty days, with the result that the strike is not interfering at all with the heavy rush of business at that plant.

So far the coal strike in Kentucky has been quiet and orderly, but operators have asked for federal troops for protection, fearing that when the miners begin to get hungry they will become rough and probably damage plants. Western Kentucky mines are operating practically full, as miners had signed an agreement in September and refused to go out. The Harlan field, which produces gas coal, is down except for the Lynch, Ky., operation of the U. S. Coal & Coke Co., which pays a higher wage scale and has non-union labor. A few mines in the Hazard field are in operation, but northwestern Kentucky is almost full down, except for a few scattered non-union mines.

To Use Producer Gas on Haigh Kilns

The plant at West Point, Ky., which is operated by Henry Kleymeyer & Sons' interests, is using soft mud machines to manufacture brick and is burning its clay in up-draft kilns fired with producer gas. At Evansville, Ind., another plant belonging to the same concern, is using a Haigh continuous kiln for burning common brick. At the present time gas producers supplied by the Manufacturers Equipment Co. are being installed, which will supply the gas to be used in burning the brick in the above kilns.

Louisville Prices Being Maintained

Prices quoted locally on common brick are \$18 delivered on the job, and \$16 on board cars, less certain discounts for cash in ten days. Face brick are quoted at \$27 on board cars and \$30 delivered on the job. Hollow building tile is sold at 55 per cent. off the Universal List on board cars and 47 per cent. off where delivered on the job. Prices are being well maintained as a whole.



T. Bishop, of the Southern Brick & Tile Co., Louisville, Ky., reports that he has a good stock of drain tile on hand, and is beginning to work on contracts for laying tile out in the state. Four-inch drain tile is quoted at \$30 a thousand, on board cars.

Maine Yards in Need of Fire Wood

The matter of obtaining firewood for use by brick manufacturing plants in Maine is a serious problem. F. A. Meader, superintendent of the Purington yard at Skowhegan, Me., is already looking around for a supply for

the coming year. About 350 cords is required for the brick burning each year.

Brick Predominates in Baltimore Building

Baltimore, Md., is determined to more than make good in the matter of construction work, and there is a keen interest in building circles in this vicinity at the present time. Operations of all kinds are under way, calling for large quantities of material, and local architects and engineers are being kept busy with the preparations of plans for new enterprises. The activity in this section has reached to neighboring districts with a "vim" and a large volume of industrial work is now progressing rapidly in the Sparrows Point and Curtis Bay communities. The Baltimore building department is showing an average of from 100 to 150 permits issued weekly for different classes of work; of this, housing is a very important factor, and construction is being rushed on hundreds of homes. Many of these buildings are of brick type, this being the predominating fireproof material in these parts.

As an idea of the character and extent of work now going on in the Curtis Bay district, Baltimore, Md., a few projects are worthy of note: the Union Shipbuilding Co. has broken ground for the erection of a large addition to its plant to cost about \$4,000,000; the Armour Fertilizer Co. is having plans prepared for the construction of a new works on the Key Highway to cost approximately \$2,000,000, replacing its factory in this vicinity recently destroyed by fire; the Standard Guano Works is planning for the erection of a new plant to cost about \$300,000. These structures will require large quantities of brick, hollow tile and other burned clay products, and will keep things "humming" in this district thruout the winter season.



The Maryland Silicite Corporation, Baltimore, Md., has been incorporated with a capital of \$35,000, to mine and refine clays and other products. Robert D. Bartlett, J. Kemp Bartlett, Jr., and Francis A. Michel are the incorporators.

Baltimore Prices Remain Firm

The call for common brick and other important building materials continues strong at Baltimore, Md., and vicinity. Prices are firm, but with tendency towards a higher level. Good hard common brick is selling for \$19 and \$20 per thousand, and current demands are not allowing much opportunity for an accumulation of stocks. Face brick is in popular favor, and the best selections range in price from \$40 a thousand upwards. Hollow building tile is moving well, as are other burned clay specialties of all kinds. The market for these goods shows no signs of diminishing and under good weather conditions, construction work will likely go forward at a fine status thruout the winter season. Fire brick is operating under a firm call, with No. 1 Standard selling for around \$70 per thousand.

Missouri Plant to Install Tile Equipment

The Harrisonville (Mo.) Brick & Tile Co., which was built by the Nicholson Construction Co., and which is owned and operated by the Nicholson interests, is planning large extensions for next spring. The equipment includes one Hoffman continuous kiln, while a second kiln of the same type has just been completed and is now ready for operation. It is planned to build sixteen round down-draft kilns, and to install machinery for the manufacture of hollow tile. A dry press department is also

operated in conjunction with a stiff mud plant. At the present time six round down-draft kilns are being constructed to take care of the burning of the dry press face brick. The combined capacity of this plant is 85,000 brick per day. W. H. Merkel is superintendent of the above plant.

Zumbrota Plant Increases Stock

At a recent meeting of the stockholders of the Colburn Brick & Tile Co., Zumbrota, Minn., at their Minneapolis offices, it was decided to raise the capital stock of the corporation \$100,000. At present the capital is \$100,000 preferred and \$200,000 common stock and with the new issue both preferred and common issues will be \$200,000.

Bricklayers Ask Increase

No action has been taken at time of writing by the building contractors of Edwardsville, Ill., with regard to the increase asked by union bricklayers. The bricklayers have notified the contractors that their wage scale shall be \$1.25 an hour after January 1, 1920. Union officials are quoted as saying the contractors will agree to the increase, but opinions from the other quarter have not been advanced.

St. Louis bricklayers are now receiving \$1 an hour. However, they will receive two increases within the next seven months. They recently reached an agreement with the Master Bricklayers' Association to receive \$1.12½ an hour after January 1, and \$1.25 an hour after May 1, 1920.

St. Louis Asks Federal Aid for Road Work

A telegram has been sent by the St. Louis Automobile Club to the Missouri senators and to the county's representatives in Congress urging that some effort be made to obtain federal aid for St. Louis County's roads, which are to be built with a \$3,000,000 bond issue. It has been learned that the county's problem of road building makes it impossible to get federal aid unless an adjustment is made. Brick dealers and large contractors were disturbed two weeks ago, when the county court proposed to spend the money over a large area instead of building several stretches of paved roads from the city limits on four state highways.

Plan Fire Brick Trade in South America

A class in preliminary and advanced Spanish has just been organized at the plant of the A. P. Green Fire Brick Co., Mexico, Mo., as the forerunner of trade expansion by that firm in South America. The study work is financed by the Green company, which is planning to develop from among the students a number of salesmen who can go into Cuba, South America, and other Spanish speaking countries to push the products of this firm.

One of the interesting features of this class is the fact that there are six young ladies enrolled.

Jersey Clay Workers' Building Committee Holds Meeting

Plans are going forward apace for the proposed new ceramic building at Rutgers College, New Brunswick, N. J. The big clay men of the state, the dominating factors in the industry, are behind the movement as a unit; that they are going to make things "hum" is a certainty and that they are able to do it, is equally assured. The energy, the push, the determination and the enterprise are there—and this means something. The enthusiasm for

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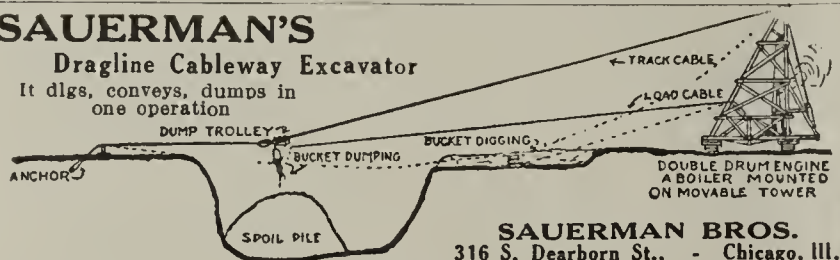
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the cause is at high pitch and this inspiring attitude is going to be turned into real productive effort. New Jersey is bound to take the lead in clay-working activities—and nothing is going to stop her.

The committee of the New Jersey Clay Workers' Association and Eastern Section of the American Ceramic Society, formed to develop plans for this new school building, held its first meeting at Trenton on October 28. This committee, to be known as the Ceramic Building Committee was appointed by Charles Howell Cook, president of the association, at the recent Executive Committee meeting, reported in the November 4 issue of *Brick and Clay Record*. An enjoyable luncheon was served for those present at Hildebrecht's Restaurant, and then the members "got busy."

The first action was the enlargement of the committee to form a representative membership from all parts of the state, and President Cook, presiding, selected the following men to form this important body, including the first four members appointed at the Executive Committee gathering, October 18: Abel Hansen, head of the Fords Porcelain Works, Perth Amboy, chairman; Professor George H. Brown, director Department of Ceramics, Rutgers College; Charles A. Bloomfield, head of the Bloomfield Clay Co., Metuchen; Charles Howell Cook, president of the Cook Pottery Co., Trenton; A. M. Maddock, of Thomas Maddock's Sons Co., Trenton; R. L. Bowman, J. L. Mott Co., Trenton; Herbert Sinclair, Star Porcelain Works, Trenton; August Staudt, president the Perth Amboy Tile Co., Perth Amboy; John A. Campbell, president of the Trenton Potteries Co., Trenton; Harold W. Wolff, vice-president, the Monument Pottery Co., Trenton; John Pfeiffer, Henry Maurer & Sons, Perth Amboy; B. B. Dinsmore, Imperial Porcelain Works, Trenton; and LeRoy W. Allison, eastern editorial representative, *Brick and Clay Record*, in the interests of this journal.

In taking charge of the meeting, Mr. Hansen, chairman, made mention of the broad domain of the ceramic industry, including, beyond the direct clay-working lines, the glass industry and the various silicate industries. He said that the new ceramic building, as proposed, should be made a state affair, of wide general appeal and interest. In the presentation of facts showing the need for the new school to the next legislature, every point of importance, he set forth, should be brought out; that it should be presented with "punch" and the proper impression, and indicate the importance of the industry in the state. He said that often many good things are concealed or forgotten, that it must not be assumed that members of the legislature knew the "story" as the New Jersey clay workers did. He impressed upon those assembled the need for "going to it" in a hearty, whole-souled manner.

Professor Brown presented tentative plans to those assembled outlining the proposed new building. The drawings have been perfected to a fine point with ideal arrangement for all features of the work, including machinery and equipment installation, laboratory, class-rooms and the like. It is planned to utilize only burned clay products in the erection of the new building, and these to a large extent will be of New Jersey production and manufacture, as to be expected. The proposed new school is estimated to cost about \$100,000 and will be one of the finest institutions of its kind ever conceived—a monument to the local clay-working industries.

President Cook set forth the need of urging the young men of the state to take advantage of the course of in-

struction now under way at the Rutgers Ceramic school, saying that with a larger number of students, the need for a new school building would be all the more evident to those in the legislature who will pass on the question. The student body, growing to be sure, he mentioned, is not growing quite fast enough, and every effort must be made to have a representative body of progressive young men at the institution.

General plans for this enlargement in the class are maturing, and it is expected that before the season is advanced very far, a fine class will be assembled.

Upon the adjournment of this preliminary meeting, it was voted to hold another meeting at Trenton on November 14, and at which time it was hoped to have the majority of those forming the committee present.


Steady Gain in Building at Newark

There is a steady continuance of building gains at Newark, N. J. With October figures now tabulated, it is shown that the local construction work during this month exceeded that of the same month of 1918 by an amount of \$1,199,500, the totals standing at \$1,448,017 as against \$248,517. This is certainly stepping along in the right direction. November is opening up in the same encouraging way; the first week of the month shows totals of approximately three times those of November 1918, or \$379,239 as compared with \$128,630. Of this amount, \$190,050 represents the valuation of new buildings of brick or other fireproof materials, including two factories, one of brick and the other of brick and hollow tile. The construction of new residences and apartments is an important feature of work not only at Newark, but thruout this district, including the Oranges, Montclair, Bloomfield and other communities. Brick, terra cotta and burned clay products are being used in large quantities for this work. At East Orange, a new four-story brick apartment will be erected at 32 Arlington Avenue by Altschuler, Kuskin and Rotberg, to cost about \$165,000; the first story will be of limestone and the balance of tapestry brick trimmed with ornamental terra cotta. Two other apartment houses in the same city will include a four-story brick structure at Park Avenue and Stockton Place, with front of limestone, tapestry brick and terra cotta; the building will be erected by Morris Daniel and is estimated to cost \$150,000; the other structure, of similar material, will be built at Park and Arlington Avenues by Louis Koppelon at a cost of \$225,000.

N. J. Construction Work at High Tension

The building situation in New Jersey continues under the most encouraging aspects. Construction work of all kinds is at high tension, and practically every community in the state is feeling the effects of the exceptional activity. Even tho the winter is fast approaching, there is no let-up in sight, and new work is going ahead in fine fashion; moreover, new projects are coming to the front in a way that seems to mean "all-winter building" and if the season is an open one and not too severe, there is little doubt but what construction operations will move along at a lively pace. It is generally pretty well known that winter building costs more than regular seasonal work, but evidently, the price consideration is one that is not being figured to a fine point—what is wanted is the buildings. Housing work continues as the big center of attraction and a vast amount of work of this

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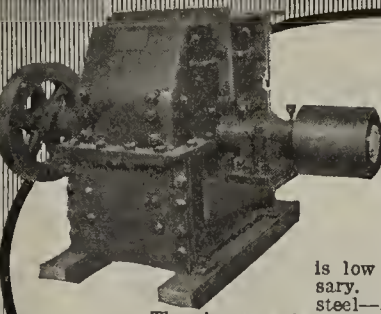
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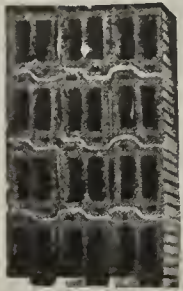
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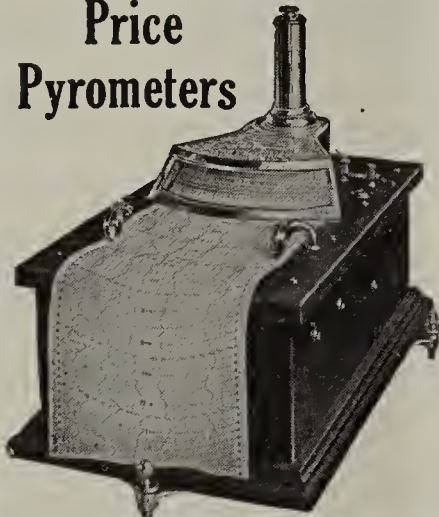
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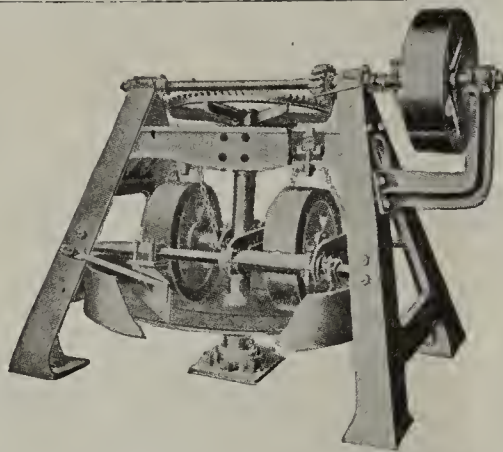
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character is under way at Newark and other points in northern New Jersey, Trenton and vicinity, Camden and in South Jersey. Factory and industrial enterprises are holding up well, with brick as the dominating material for construction. Public structures are commencing to materialize in a strong way, and there is considerable work of this nature in progress. The state as a whole is rounding out a fine aggregate in building operations; it has "come back" strong after the lean months of 1918, and well to the satisfaction of manufacturers and building material dealers.

Rutgers Ceramic Course Well Under Way

The Department of Ceramics at Rutgers College, New Brunswick, N. J., has opened up the season in an encouraging way. A number of students have arranged to take the course of instruction and with plans now under way among the manufacturers of pottery and other ceramic products to send men from their plants to the school, it is expected that the season will develop into one of the best that the department has ever enjoyed. An effort is being made to show young men the value of a course of training of this character and how the knowledge acquired will prove of great utility in their daily work. The department is under the direction of Professor George H. Brown, who has arranged an excellent program of practical instruction for the term. President W. H. S. Demarest of the college has been making a tour of the Middle West, stopping at Chicago, Detroit, Cleveland and other points in the interest of the million dollar fund that is being raised by Rutgers College.

Stock Low at N. J. Seasonal Plants

There is little to record in the matter of brick production as regards the seasonal plants in New Jersey. Yards of this nature at Hackensack and Trenton have now terminated their season's run, and with stock on hand none too large for current demands. If the present call for this material keeps up as now expected, the majority of yards will be sold out before many months. All-year plants in the Trenton district are holding up well in the matter of production, and among these is the Independent Brick Co., with works at Bordentown. The company operates two plants at this location, and supplies a large volume of trade in different parts of the state; the bulk of business covers quantity orders. Yard prices in the Trenton section range around \$18 and \$19 a thousand, while at Hackensack, \$17 and \$18 are the prevailing figures. The season, all in all, has been a good one, particularly since the summer months, and plants will reopen in the spring under encouraging conditions.

Expect Rise in Price of N. J. Commons

With the large volume of building work under way in New Jersey, there is a keen call for building commodities of all kinds, with common brick, hollow tile, partition tile, and other burned clay products, well in the lead. Prices are firm at existing levels—very much so, with a tendency of upward trend. Particularly is this true in the matter of common brick, which, following the lines of the New York market, is apparently due for a rise of a dollar or two at an early date. Newark and other points in northern New Jersey are large users of Hudson River commons, and in this section at the present time the prices range from \$20 to \$22 a thousand for best grade

material, delivered on the job. In the Trenton district the prevailing quotations are \$19 and \$20, with indications of an early rise. In the southern part of the state and the different shore resorts, the figures are \$22 and \$23. There is a healthy call for face brick, and good grade material is selling from \$35 to \$50 a thousand, delivered on the job, with prevailing average in the important centers of from \$43 to \$45. The demand for fire brick is increasing, with no material change in prices; at Newark and vicinity the price average is \$65 a thousand, delivered on the job. At Trenton a similar figure prevails, while in the southern part of the state prices as high as \$70 are being asked for No. 1 standards. Hollow building tile is moving in a very encouraging manner, and larger shipments are being received from the tile producing centers in Pennsylvania; for some weeks past there has been difficulty in securing this material, owing to a shortage of freight cars. Other burned clay specialties, such as sewer pipe, drain tile, etc., are operating under a good call.



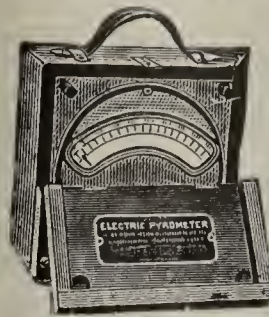
Arrangements are being made for the sale of the plant of the Raritan Clay Products Co., Keasbey, N. J., to the Burnrite Coal Briquette Co., of Newark, N. J. Judge Adrian Lyon was appointed receiver for the Raritan company in 1917, and has made application to the court of chancery for permission to sell the plant for a consideration of about \$150,000. The property is admirably located, and some years ago was a prominent factor in the local clay-working field.

New York Construction Makes Progress

Progress is still being made in the matter of construction work in the different boroughs of Greater New York. Housing work, including residences and apartment buildings, hold the center of attraction, and in the Long Island and Brooklyn sections a number of interesting projects of this nature are under way. Among these are a five-story, brick apartment on Queens Boulevard, Long Island City, to be erected by Herbert Dongan, Kew Gardens, L. I., at a cost of \$385,000; a brick and red tile, 48-family apartment house at Burns Street and Tennis Place, Forest Hills, L. I., to be constructed by the Gardens Apartment Co., at a cost of about \$215,000; and a four-story, brick apartment for the Eighty-second Street Corporation on Cropsey Avenue, Brooklyn, to cost \$125,000. Industrial work continues at a fair pace, but the operations in this line are not quite as strong as they might be. In Brooklyn, considerable attention is being given to brick residences and hollow tile garages, and a good volume of work of this class is under way. In the Borough of Manhattan, there is a good quantity of school work in view calling for large amounts of face brick, common brick and limestone.

Prices Continue to Soar in N. Y. Market

The big demand for common brick in the New York market has brought about a rapid rise in price, with the commodity moving from \$16. per thousand, as recorded in the November 4 issue of *Brick and Clay Record*, to \$17 and \$18. Even at this figure there is no stability to the quotation, and sales are reported as high as \$19 and \$20 per thousand, in wholesale lots, alongside dock. Throughout the spring and summer season the wholesale price for Hudson River common has held firm at \$15, and the conservative manufacturers from the up-river districts



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Portable Model 322, High Resistance Type with internal compensator is especially desirable for Brick Kiln temperatures. May we quote on your equipment?

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A Tank You Can Trust

You don't have to keep your eye on a Caldwell Cypress Tank. You need have no fear of breakage or leaks. It's like a good workman—on the job and giving honest service every day in the year.

Because the Caldwell Tank is built of the highest grade materials according to engineering principles by experienced tank builders who realize that a good tank is more than a carpenter's job. As a guarantee against leakage, every joint is machine-planed with full bearing and the hoops are spaced so that no hoop is over-stressed.

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**TANKS
AND
TOWERS**



HERE'S A GOOD ONE

Recently our Buffalo representative sent us a report, which on second thought we believe will interest every clay manufacturer. Having called on an agent for sprocket chains made by a competing firm, our man reports that "he acknowledges, although a _____ agent, that for some of his work there is nothing to compare with UNION CHAIN under 'grilling conditions.'" All of which shows that even our competitors concede the superiority of UNION CHAIN.

If there are "grilling conditions" in your plant, we would welcome the opportunity to prove the many advantages of using UNION STEEL CHAINS.

THE UNION CHAIN & MFG. CO. Seville, Ohio

Leschen Wire Rope

We make Wire Rope for every wire rope service. If you will tell us how you use Wire Rope we shall be glad to suggest the correct rope for the work.

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**BUILDING
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have been instrumental in this constant level. But now, with the brick-making season at the Hudson River plants practically over for the seasonal yards, the break has come, and there is no holding of price. With figures at \$18 wholesale, the present authoritative quotation, it means that New York operators will have to pay \$22 and above, delivered on the job. Whether this amount will tend to retard building, remains to be seen, for up to the present writing there is just a steady call for the material. The market is lean, there are no available stocks, and shipments are taken up as soon as they arrive. New Jersey is also making a call for the material, but minimum cargoes are reaching local points.

There is a good call for building materials of all kinds in the New York trade—hollow tile, drain tile, and other burned clay specialties. Prices are moving upwards on a number of basic commodities, including hollow building tile. A new classification has been issued for this material, covering amounts over 2,000 sq. ft., and quantities under this figure. The following quotations are being made on different sizes in New York, with 5 per cent. discount for cash in 15 days, for amounts under 2,000 sq. ft.; 2-in. \$87.40; 3-in., \$131.00; 4-in., \$139.80; 6-in., \$192.20; and 8-in. \$262.00. Face brick is moving well, and a good demand prevails thruout this section with price range for the best selections between \$40, and \$50 per thousand.

✻ ✻ ✻

Hudson River brick yards are making the most of the waning season. Production at many plants is still under way, with the Haverstraw district assuming an important status in the matter of supply. The plants in this section will have to furnish the bulk of New York's requirements for the winter season, and with the present outlook, this will be no mean task. Production at many yards in the up-river district has been far below the normal status during the past season; in the first place the yards were late in commencing active manufacture due to the general uncertainty of affairs early last spring, and when an effort was made to go ahead in a big way, the labor problem exerted itself to a distressing point. With the anticipated difficulty in securing coal at the present time, there is likely to be trouble and loss ensuing thru the inability to burn the green brick now lying on the tracks. It looks as tho ingenuity would be required to a fine point to carry out plans in the desired way.

✻ ✻ ✻

The Hay-Walker Brick Co., 52 Vanderbilt Avenue, New York, reports that business is good at the present time, with encouraging outlook. This company has been furnishing large quantities of high grade face brick for operations in New York and at different points in New England during the months past, and is a leader in its line thruout this district. The company handles the production of a number of the important face brick manufacturers in the Pennsylvania district, representing in this territory, among others, the Upper Kittanning Brick Co., Altoona Brick Co., Corry Brick & Tile Co., the Wadsworth Brick & Tile Co., and Bonner & Marshall Brick Co.

New Residence Draws Cleveland's Attention

What is claimed to be the handsomest and most costly brick residence construction of this season, as far as the material involved is concerned, and also claimed to be one of the finest structures of its kind in this part of the

country, has been started at Cleveland, Ohio, in the new residence of G. G. G. Peckam, president of the Ohio Brick Co., on South Park Boulevard, Cleveland Heights. Two years ago Mr. Peckam built a residence of red mixed brick. Recently he decided to erect a new residence on property adjoining, but this time decided upon material that would include all dark hued brick. Such material has been obtained from the R. L. Queisser Co. In all 75,000 brick will be used in the construction of the main and out buildings. Dark blues, purples and browns will be used. In addition 9,100 special brick, cut by hand, to match texture and color of the principal material, will be used for finishing purposes.

One of the unique features of the construction will be the use of Hocking Valley salt-glazed brick in areaways. The object of supplying this material is to obtain a good reflection of light into kitchen, laundry, billiard room and other important down-stair departments in the residence.

The smaller quantity of special hand-cut brick will be used for roof drainage and the like, instead of metal gutters and spouting. It also will be used for finishing window ledges and other points about the buildings. This particular brick was made by the McArthur (Ohio) Brick Co.

Mr. Peckam has obtained the services of twenty expert brick masons to handle this work, and architects and builders from all over northern Ohio are making periodical trips to Cleveland Heights to watch the progress of the work. Experts in residence construction who have seen the material and workmanship declare this residence will be a masterpiece of brick construction.

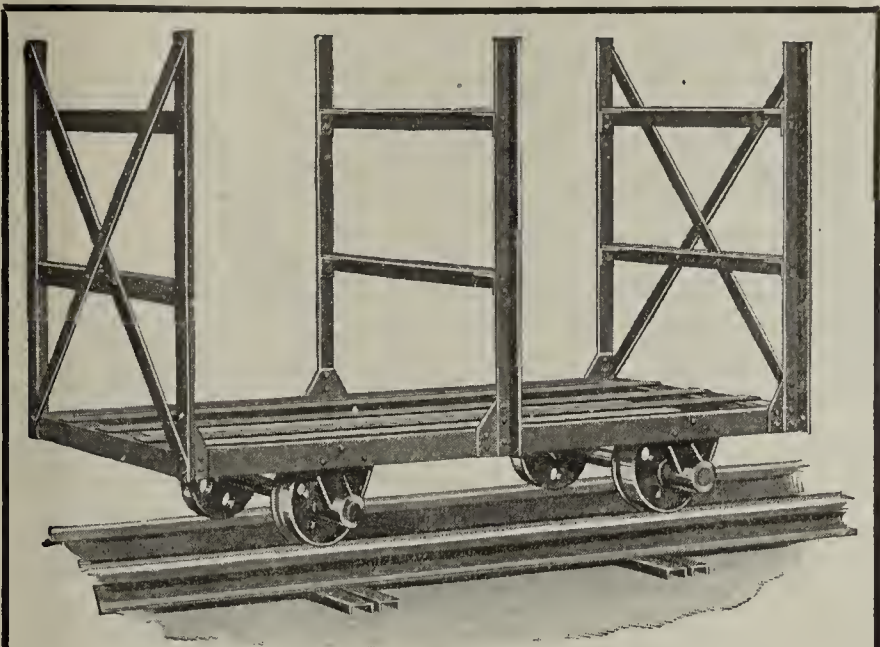
Use of the salt-glaze brick in the areaways is a new idea in outside construction where reflected light is required, according to R. L. Queisser. The chief claim for its adaptability to this use is that it fills all the requirements of white enamel brick without crazing as does the latter sometimes. The salt-glaze brick have been used in this section heretofore in interior construction, however.

The Peckam residence was designed by Harry P. Shupe, and is expected to cost around \$250,000.

Cleveland Bureau to Supervise Building

Directors of the Cleveland (Ohio) Chamber of Commerce have approved the formation of a bureau of experts, backed by banks and loan companies, for the purpose of supervising construction and guaranteeing the value of new buildings in the Cleveland district. The plan will have the cooperation of the City Planning Commission. The bureau will be composed of architects, engineers and construction interests, who will pass upon plans for new buildings, giving special attention to suitability of the building to its purpose, permanence in value, exterior design, quality of materials used, and effect upon adjoining property values. Favorable report of this committee will assure the builder of obtaining the maximum loan for construction purposes. Buildings to be considered under this plan will include houses, offices, apartments and factories.

During the last three years a committee under the City Planning Commission has been awarding medals for the best construction in these divisions, but not the extended progress in the direction desired has been made, it is admitted. It is believed the new suggestion, basing awards upon the builder's ability to obtain the maximum loan, will have the desired effect of raising building stand-



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20

ards. Morris A. Black, chairman of the commission, will seek the cooperation of financial interests to back the project, and if it carries, it will be the first adoption of its kind in American cities, according to Miss Charlotte Rumbold, secretary of the commission.

Building Material Costs Investigated

Members of the building material industry were witnesses before the grand jury investigation at Cleveland, Ohio, into the cost of building materials during the past fortnight. The investigation was linked up with the inquiry into clothing costs as well. The inquiry is being conducted under the direction of William Agnew, special assistant county prosecutor. The inquiry grows out of the special grand jury investigation started last August into the general high cost of all commodities.

Among prominent members of the industry who have already stated their views to the present investigating body are: P. F. Weiss, Independent Builders' Supply Co.; J. V. O'Brien, treasurer, the Cleveland Building Trades Credit Association; E. C. Keith, City Supply Co.; A. C. Van De Velde, Edgewater Lumber & Supply Co.; C. M. Harris, Harris-Murray Co., and several leading contractors, engineers, architects and officers of building trades associations.

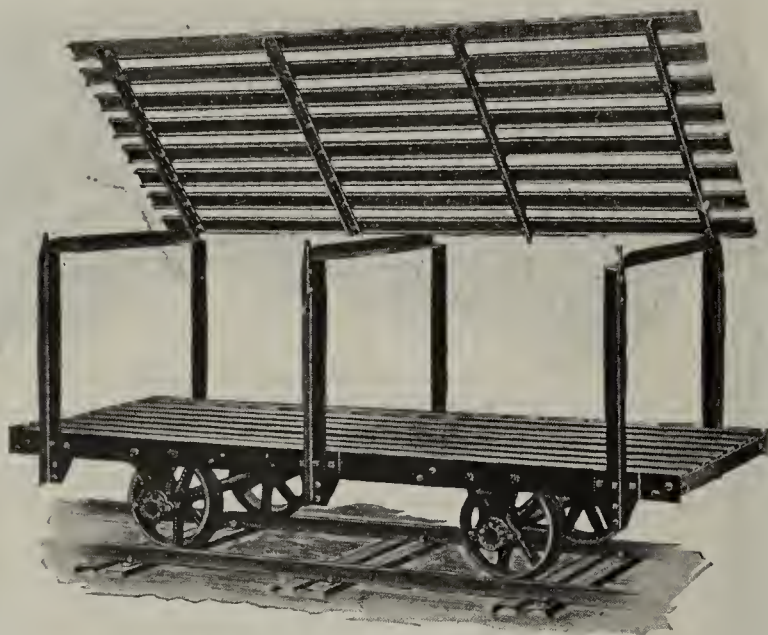
Immediately after the witnesses have been heard the evidence will be placed before the grand jury for findings. "If the report is made separately from that of the clothing investigation, it will be out in a couple of weeks," says Mr. Agnew. "But if it is decided to combine the report with the investigation of both industries, it will take another month before a decision is reached."

Ohio Plants Not Hard Hit By Coal Strike

The calling off of the bituminous coal strike, altho no mines which were closed down by the strike have yet resumed operations, will relieve the fuel situation among Ohio clay products plants. Most of the plants in the Buckeye State were operated, but some few were closed down for want of fuel. As a large proportion of the plants are located in the Hocking Valley, they had their own coal supplied and the officials of the United Mine Workers' Union permitted these mines to work, on the understanding that none of the coal could be sold commercially. As a result of this ruling the plants of the Ironclay Brick Co., at Shawnee; that of the Claycraft Brick Co., at the same place, and other plants at Nelsonville and Logan, were operated. In other instances brick manufacturers had sufficient coal supply in reserve to continue operations. There was some reduction in output as a result of the coal miners' strike, however. The reduction was principally among common brick plants.

Small Roads Listed For Early Improvement

Early improvement of back roads in Cuyahoga County, Ohio, so that these short cuts will link together the main traveled highways in northern Ohio, is the plan of county commissioners, according to announcement of Commissioner Joseph Menning, Cleveland, Ohio. It is proposed to raise \$350,000 for these improvements each year thru the new road levy which provides an assessment of a quarter of a mill for two years. First improvement, according to Commissioner Menning, will be of a road which will connect the Columbus-Toledo highway, which is sev-



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Dryer Cars; correctly designed, correctly
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eral miles west of Cleveland. In all about ten small roads are listed for improvement, all of which will make for paved traffic between Cleveland and Toledo, Columbus, Akron, Warren and Wooster.

What real improvement in road construction will mean for northern Ohio is reflected in the announcement of the formation of another new truck company that will handle freight between Ohio and Michigan cities. The company will be known as the Rainbow System of Motor Transportation, and will begin operations in Cleveland, Youngstown, Toledo, Detroit and Pontiac. Among Clevelanders back of the project are Richard Ferguson, who is president, and Herman Poepke, general manager. The company will operate twenty-two trucks and twenty-six trailers, and trains will consist of two or three units of these, traveling at an average speed of twelve miles an hour. Fifteen tons of freights will be carried on each trip.

Special Tax Levies Carried in 61 Counties

Special tax levies, voted on at the recent state election in Ohio in 66 counties in the state carried in 61 of the counties. The special tax levies provided for increases of one-half to one mill on the tax duplicates for road improvement and maintenance and in all about \$7,000,000 extra will be provided next year for that purpose. The levies ranged from one year to ten years, the majority being five-year levies. Thus it is seen in all that about \$45,000,000 will be available for road work during the coming decade, in addition to the regular sources of income. The largest tax levy proposition defeated was in Hamilton County, where Cincinnati is located. The Ohio Highway Commission has adopted the plan of patrolling the public roads and maintenance along that line. State Highway Commissioner Taylor, Chief Deputy A. H. Hinkle, Ett Smith, Youngstown, president of the Ohio Engineering Society, and W. A. Alsdorf, secretary of the Ohio Good Roads Federation, left recently on an automobile trip to investigate the patrol system as used in a number of eastern states.

Great Activity in Columbus Operations

Despite the approach of winter, building operations in Columbus and Central Ohio territory continue to show activity. This is especially true in home and apartment building. On the other hand, quite a few larger structures are projected and some have been started. During the month of October the Columbus building department issued permits for 365 new structures to cost \$746,245, as compared with 152 permits and a valuation of \$216,855 in October, 1918. During the ten months of the year that have passed, the department has issued 3042 permits, having a valuation of \$5,514,505, as compared with 1,643 permits and a valuation of \$2,549,080 in the corresponding period in 1918. These permits do not include the large number of dwellings which are projected and in process of construction outside of the city limits. Surrounding Columbus are about a dozen small municipalities, most of which are fashionable residence districts.

Work on Improvements Progressing Nicely

The Franklin Brick & Tile Co., of Columbus, which operates a large brick plant at Taylor Station, east of the city, has completed eight additional kilns, increasing the capacity of the plant. The concern now has 27 kilns, of

The ERIE Shovel is reliable. Built far stronger than the usual standard.



**"3 men
and 1 Erie
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"We are tickled to death with our ERIE Shovel—could not run our plant without it. Three men and the ERIE easily give us enough shale to keep the plant supplied—enough for 100,000 brick a day."—D. D. Evans, General Mgr., WEST VIRGINIA PAVING AND PRESSED BRICK CO., Huntington, W. Va.



Serves either as steam shovel or as locomotive crane, with clamshell bucket.

The W. Va. Paving & Pressed Brick Co. went into the steam-shovel question very thoroughly before buying their ERIE. They carefully compared different makes of shovels.

We advise you to be just as careful. Get the facts—then pick the best shovel.

Write for a copy of our Bulletin B.

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Flexible as a belt

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Longer life than either

Our engineers, experts in the art of designing chain drives, will gladly call and assist in solving any power plant transmission problem without obligation.

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PENNY WISE AND POUND FOOLISH

is the man who continues
to pay more to

BURN BAD PRODUCT

than to

BURN GOOD PRODUCT

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which one has a capacity of three-quarters of a million brick. It is planned to make both common and face brick at the plant in the near future. The work of erecting the large hollow ware plant at the same place is progressing. Excavations have been made and it is believed that the new plant, which will have a capacity of 25 tons per day, will be ready for operation by June 1 of next year and possibly sooner. The company has completed ten of its dwellings for its workers. It is planned to erect ten more houses.

Columbus to Be Well Represented

A large delegation of Columbus brick men will attend the annual meetings of the American Face Brick Association and the Face Brick Dealers' Association of America, which will be held at French Lick, Ind., December 2 to 4, inclusive. In the delegation will be J. M. Adams, general manager of the Ironclay Brick Co.; Emmet Howard, of the Columbus Brick Co.; W. T. Matthews, sales manager of the Claycraft Brick Co.; H. M. White, sales manager of the Hocking Valley Products Co.; Charles Harrison and Leroy Gaddis, of the Gaddis-Harrison Co.

Still Have Trouble Getting Cars

The car supply in Ohio is about 65 per cent. of requirements, according to statements of traffic departments of the larger manufacturing concerns in the Buckeye State. No special change has occurred recently, altho the recent demurrage rules will probably increase the car supply in the near future. The face brick plants in the Hocking Valley are having trouble in getting sufficient cars to fill their orders promptly and the same is true of the paving brick plants of the state.

Labor Turnover Still High in Ohio Plants

The labor situation among Ohio brick plants is unchanged from two weeks ago. There are no strikes of consequence and there is a fairly good supply of workers. Some plants report from 65 to 75 per cent. labor supply, while others say they have all the men needed. But the labor turnover is higher than ever before and that has the effect of reducing the output of many of the face brick factories.

Build More Kilns to Keep Pace With Orders

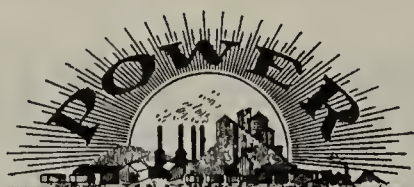
The directors of the Wadsworth (Ohio) Brick & Tile Co. at a recent meeting decided to issue \$25,000 additional stock for the erection of more kilns. This will increase the outstanding stock to \$250,000. The company is doing a great business and additional equipment is necessary to keep pace with orders.

To Burn Season's Last Kiln of Brick

Kulp Bros. Brick Co., at Columbus, Ohio, is at the present time finishing its operations for the year. At the present time all of the brick is being set into scove kilns which will soon be fired, and which will wind up this season's run.

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There is plenty of brick and tile in Cleveland, according to J. M. Beville, manager of tile production at the Cleveland Builders' Supply & Brick Co. This is proof, he points out, that the coal strike has not been as serious



Bituminous COAL Particularly Adapted To Burning Clay Ware

INDIANA BLOCK

Three Operations in Clay County, Indiana, on Monon R. R. Capacity, 3,000 Tons per day.

INDIANA Number 4

Three Operations in Green County, Indiana, on Monon R. R. Capacity, 3,000 Tons per day.

Both burn with long flame, are very low in sulphur, and leave a flaky ash.

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POWER COAL COMPANY

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as some would lead the public to believe, nor is it by any means as serious as the steel strike itself. "The manner in which the coal situation has been fixed is such as to make possible regular deliveries on tile," says Mr. Beville. "If the strike had gone thru as at first indicated, some serious development on tile production might have been looked for. The open weather so far has induced more building at this time of year than ever before, and demand for tile is as big as at any time thruout the past season."

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The Toledo (Ohio) Clay Products Co. has been incorporated with a capital of \$100,000 to manufacture and sell brick and other clay products. The incorporators are Edward H. Rhoades, L. H. Kreke, Edna L. Livingston, Edna Schramm and Flora Hawkins.

✱ ✱ ✱

"Building is a basic industry. If you build a home you make business for more than a hundred correlated industries."

Business Also Good at Oklahoma

F. A. Daley, general manager of the Sapulpa (Okla.) Pressed Brick Co. reports very good business during the past year. This plant has a daily capacity of 40,000 common brick.

Work at Quinton Plant Progresses

Work on Quinton, Okla.'s, first brick plant is being rushed by its owner, H. B. Duke. An output sufficient to meet the local demand is assured within the next few weeks.

Increasing Output 25 Per Cent.

W. E. Wilson, secretary of the Salem (Ore.) Tile & Mercantile Co., reports that his concern finds business very good at the present time. The company is building another kiln and addition to its drying houses, thereby expecting to increase its output 25 per cent. C. A. Warner is about to retire from the concern.

Will Start Operations at Columbia, S. C.

With a capital stock of \$75,000 the Shale Products Co., has been formed by A. T. Blatchford and Deems Haltiwanger, who will operate at Columbia, S. C.

Philadelphia Prospects Most Encouraging

Construction work at Philadelphia, Pa., and vicinity continues at a good pace. The prospect in view is most encouraging and reports from the offices of architects and engineers indicate that a large volume of work will soon mature. At the present time every effort is being made to make up for the time lost on account of the recent strike in the building trades. Housing work, including apartment houses is coming in for a good share of activity, while industrial operations are assuming an important status. A number of public buildings, including churches and theatres are now out for figures. The local operations are reflected in neighboring sections, and a vast number of houses is under erection at Media, Aldan, Darby, Collingdale, Tinicum, Haverford and in other local sections. Should the winter prove too mild and open, there is every likelihood of

Perforated Steel Screens

Of Every Description

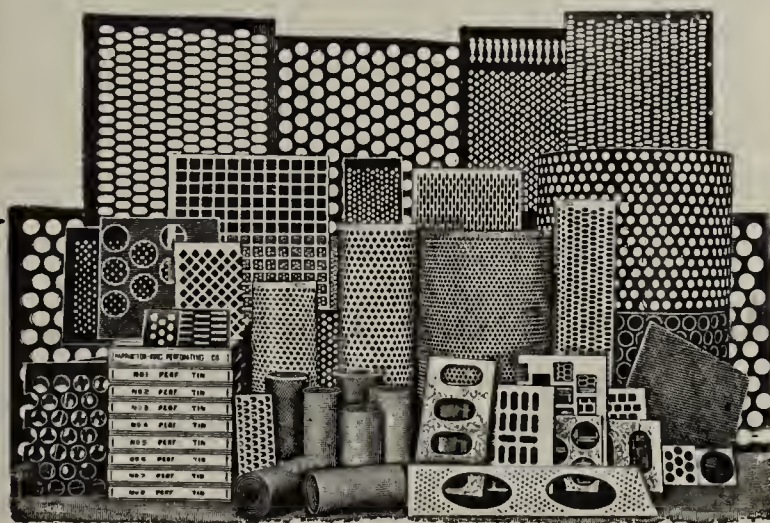
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You can safely guarantee that your brick
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Scum-Proof

You can get a higher price and influence
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Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's dependable.

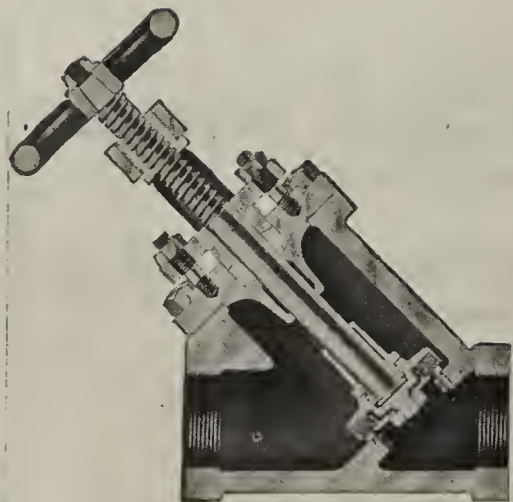
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of high grade chemicals
for the clay industry*

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Jenkins Iron Body
"Y" or
Blow-off Valve

Valves for use in the Brick and Clay Industry

Special attention is called to the Jenkins Iron Body "Y" or Blow-Off Valve—a strong, rigid valve that, on account of the full straight opening, offers practically no obstruction to the free passage of steam or liquids, making them well adapted for almost any service where thick fluids, as gritty, sediment-laden water, are handled. Jenkins Valves are backed by fifty years of practical experience in valve making. Their construction is heavier, particularly where the strain and pressure is greatest. Genuine Jenkins Valves are identified by the Jenkins "Diamond Mark"—Look for it—demand it.

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2018-J



Rossendale-Reddaway

FABRIC BELTS
for
EVERY
SERVICE



Motion is no proof of efficiency

A belt may keep the pulleys whirring, but if it slips or does not run true, you not only lose power—and, consequently, production—but your transmission gear suffers and the belt wears itself out too quickly. Every drive must have the right belt—load and drive conditions considered. Anything short of exactly the right belt becomes an unnecessary loss, because it is possible to buy the right belt from the Rossendale-Reddaway Line of fabric belts for every service.

Ask our engineering department for recommendations for your difficult drives. Their advice is competent—and free.

The Rossendale-Reddaway Belting & Hose Co.
Newark, N. J.

Export Dept. 26 Cortlandt St., New York City



2004-R

seeing top-notch operations thruout this district. The total building at Philadelphia during October aggregated \$4,840,005 in permit valuations, with an increase of almost \$4,000,000 over the corresponding month of 1918, and this, despite the labor difficulties. During this month, operations on 221 two-story dwellings were inaugurated, with estimated cost of \$1,227,900. All in all, October, 1919 was the busiest month in local building circles which has been experienced during the past ten years.

Production Only About 60% of Normal

There is a growing call for building products of all kinds in the Philadelphia, Pa. district, with prices holding strong. The matter of quotations is one which is causing not a little concern; figures are on the upward trend and it is very likely that higher levels will be reached at an early date. A rapid change in prices of basic and important commodities, such as brick and other fireproof materials is liable to cause a recession in operations, if current comments and opinions are seriously considered. There is a healthy demand for common brick, with price ranging as high as \$21 per thousand, delivered. Hollow tile is engaging under a good market, while fire brick is working back into its own in the matter of call. First grade, standard material of the last noted is selling at around \$70. Good selections of face brick are in firm demand, with quotations at \$45 and \$50 for the best stocks. Mason material dealers and manufacturers are becoming more active, altho production of primary building products is now only averaging from about 50 to 60 per cent. of normal, due for the most part to labor conditions.

No Let-Up in Pittsburgh Building

House building is going on in ever-increasing volume in and around Pittsburgh, Pa. There is a marked shortage of houses and hundreds of families in the city and the surrounding boroughs have had to store their furniture. Men in an authoritative position have been publicly warning the public that next spring will find an even greater lack of homes for renters, and this is serving to stir them to building. The building started in real earnest three or four months ago, and has increased rather than decreased as time goes on. Contracts already made insure continuous building until mid-February at least, if the weather keeps open. Contractors are certain there will be no let-up during the winter, unless unusually severe weather ensues.

Over \$4,000,000 Road Bonds Passed

At the recent November election four counties in Western Pennsylvania voted by large majority to issue over \$4,000,000 road improvement bonds. Bradford County voted on a \$1,000,000 issue as did Indiana, Lawrence and Venango counties. A half million bond issue was authorized by the voters of Lycoming County. Finances from these issues are to be used in new road construction during the coming year.

Eureka Fire Brick Works Expand

The business of the Eureka Fire Brick Works, of Mount Braddock, Pa., has expanded so largely, particularly in its products used by blast furnaces, that an office has been opened in Pittsburgh, at 1507 First National Bank Build-

ing. This office will be in charge of E. L. Messler, president of the company, who has served as captain of the 21st Engineers for a year in France.

The plant of the company, under the superintendency of H. Watson, is running full and has been placed in excellent shape to take care of the increasing business of the company.

New Brick Plant for Lancaster Reported

To overcome the acute shortage of building brick, which has been one of the principal handicaps with which the Lancaster (Pa.) Home Building Association has had to contend, one of the local industrial plants has made arrangements to establish an extensive brick manufacturing plant, which will be in active operation within a short time.

Organizing State Housing Bureau

The Pennsylvania State Chamber of Commerce, Harrisburg, has perfected plans for the organization of a state housing bureau. The new bureau will be under the direction of Ritchie Lawrie, Jr., an expert on this subject. It is proposed to make the matter of state housing a thoroly live project, developing plans for broad activities in this line.

The Crescent Refractories Co. is operating its plants at Curwensville, Lumber and Clearfield, Pa., for its well-known line of high-grade fire clay refractories. The company has a number of trade brands of different products, covering furnace and stove linings, furnace brick, refractory ground and batch clays, calcined flint clay grog and dust, soft clays crushed flint and numerous other specialties.

One of the active concerns in the clay products business at Philadelphia, Pa., is Thomas Robinson & Co., with offices in the Real Estate Trust Building. This company furnishes large quantities of material for local and neighboring operations, including sewer pipe, hollow building blocks, fire clay, fire brick, drain tile and other commodities. Trade is holding up well, with outlook encouraging.

Brick manufacturers and manufacturers' agents in the Pittsburgh district are making an effort to secure the contract for 5,000,000 brick just announced by the Government. The brick are to be used in the construction of the armor plate plant at Charleston, S. C.

Advances were made in the prices of hollow tile, "back-ups" and other grades in the Pittsburgh district, effective November 1st.

Makes Hand Repress Brick

F. R. Henry, who operates a common brick plant at Murfreesboro, Tenn., plans the improvement of his plant during the coming winter so as to be prepared to take care of the big demand which he expects next spring. At the present time he is making brick by hand and repressing them in a hand repress machine.

Extending Into Building Supply Business

G. M. Creswell, who operates a common brick plant at Milan, Tenn., using the dry press method and burning in scove kilns, reports a very good business with common

WATERBURY ARMORED ROPE



IN STEAM SHOVEL WORK

THIS is another service in which wire ropes are subjected to unusual strains and wear. The dust and grit raised in digging operations of this character is exceptionally hard on ropes. The Clay Products Company of Brazil, Indiana, is using Waterbury Armored Rope on their shovels with the result described by them, as follows:

"Referring to your favor of November 22d, we are pleased to advise that your 1 x 1 1/2 inch Gore Construction is giving us about 180 days' service against 60 to 80 days' service from an ordinary wire rope. We find it a very satisfactory cable and are using the same run of rope on our smaller shovels to as good an advantage as the larger rope is giving."

WATERBURY ARMORED ROPE

PLAIN STEEL

WATERBURY ARMORED WIRE ROPE

Gore Patent, March 15, 1911

6 Strands, 37 Wires to Strand, 1 Hemp Core

The wires of this rope should be laid on the outside diameter of Rope

Diameter Single	Diameter Outside	Average Weight Per Ft.	Approx. Break on Test Tons	Min. 30 lb. Load on Test Tons	Test Force Per Ft.
1/4 x 3/4	1 1/8	1.05	14	4	\$0.33
1/2 x 3/4	1 1/2	1.40	21	6	.48
3/4 x 1	1 3/4	1.65	27	8	.51
1 x 1 1/4	2 1/8	2.25	35	10	.70
1 1/4 x 1 1/4	2 3/4	2.75	44	12	.83
1 1/2 x 1 1/2	3 1/8	3.35	55	15	1.00
1 3/4 x 1 3/4	3 3/4	3.95	66	18	1.17
2 x 2	4 1/4	5.10	88	24	1.50
2 1/4 x 2 1/4	5 1/8	6.15	110	30	1.70
3 x 3	6 1/4	8.25	154	42	2.33
3 1/2 x 3 1/2	7 1/8	10.35	198	54	2.92
4 x 4	8 1/4	12.45	242	66	3.50

For full details of Waterbury Armored Ropes, consult the Waterbury Rope Manual, which is sent free on request.

165,000 cubic yards—867 actual working hours and the rope still in use

On a dipper dredge, too—which is a real test of rope quality. Of course it was a Waterbury Armored Rope (Gore Patent). The convex edges of the flat wire armor give the flexibility of bare rope—and the armor takes the rub which otherwise would eat up the crown strands. So a Waterbury Armored Rope is still working long after other ropes have gone to the junk pile.

Ask for a copy of the Waterbury Rope Manual—all the rope "dope" you could want. (It's free.)

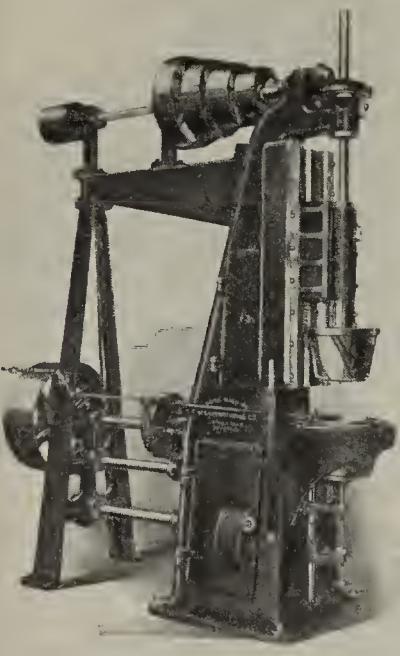
WATERBURY COMPANY
63 PARK ROW, NEW YORK

Chicago San Francisco Dallas, Texas New Orleans

Making Two Profits with One Machine

A contractor set out to buy \$10 worth of brick. He was going to get \$20 for the brick if delivered the same day. But he lost the \$10; and having no credit with the brick manufacturer, was unable to deliver the goods to buyer. Loss, \$10? No, \$20—which amount the contractor would have pocketed had he delivered the goods.

Losses in idle labor means corresponding losses in sales—double losses.



By utilizing your workers' spare time during "off periods," you not only maintain your quota of production, enabling you to make the profit as planned, but you save the cost of idle workmen's time. You make a double profit.

This double profit is assured you with a Baird Pottery Machine. It is simple and economical in operation, costing practically nothing in labor, as any idle workman can operate it. Moulds Flower Pots, Stoneware, Runner Brick, Crucibles, etc. The market for its products is unlimited. Let us explain to you how other plants are profiting by keeping their idle help busy on one or more of these machines. Send along a sample of your clay.

BAIRD MACHINE & MFG. CO.
265-69 Jefferson Avenue E., Detroit, Mich.

"We have been using at our two factories for the past year, Barium Carbonate made by the Rollin Chemical Company. This material is used to prevent scum and has proved entirely satisfactory."

THE UNITED STATES ROOFING TILE CO.
5-15-18

IMPROVE YOUR WARE

It can be done by the use of Rollin's Barium Carbonate because it eliminates scum.

Just add it to your clay at the pug mill or dry pan and it will make the scum-producing salts insoluble and harmless to your ware.

Write us now.

The Rollin Chemical Co.
Charleston, W. Va.

BRICK MUST HOLD UP ITS REPUTATION

brick selling at \$16 to \$18 per M. Mr. Creswell is considering the extension of his operations into the general building supply field.

Brick Used For Ranger Paving Job

Brick has been selected as the material for paving 58 blocks of streets in Ranger, Tex., and the contract for the work has been awarded to the McKenzie Construction Co. of Texas, with principal office in San Antonio. The contract calls for completing the work in 450 working days. It is understood that the paving brick will be furnished by the Thurber (Tex.) Brick Co. The cost of the paving to the city will be \$4.80 per yard, with no maintenance bond. The paving will be of 3-inch vertical brick on a 5-inch concrete base, with sand cushion.

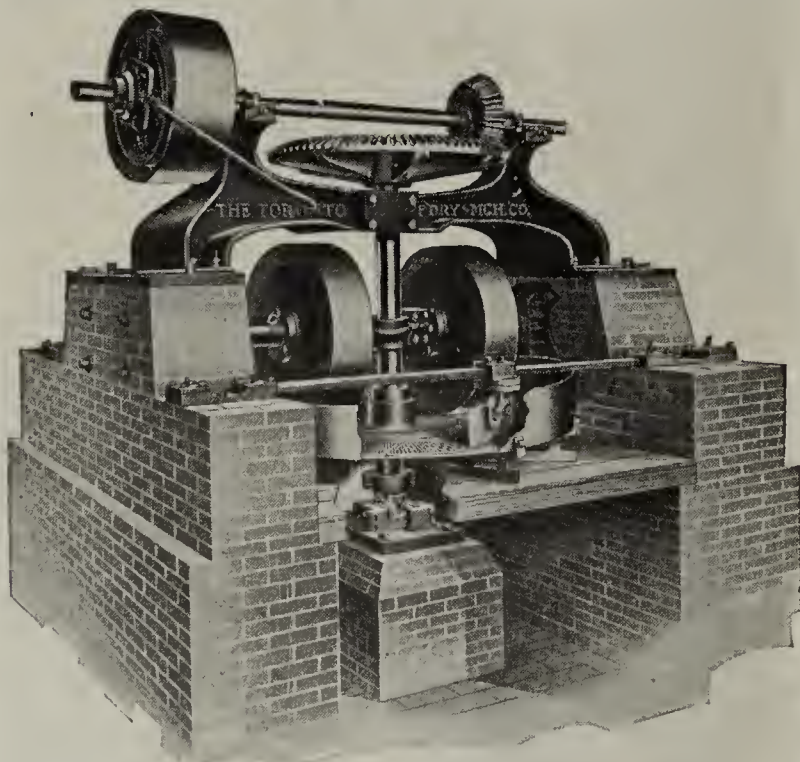
The total amount of the contract as let is \$613,000. This is in excess of the former contract, which amounted to \$434,000, made by the General Construction Co., which is now putting down six blocks in Ranger. The city recently voted bonds for the paving of 64 blocks in the city. Streets, which will be paved at once, besides Main, which is nearly completed, are Hunt, Commerce and Railroad avenue, all on the east side.

The company which got the contract recently did \$3,500,000 worth of paving for the government at its several cantonments. Steam-shovels for unloading cars of gravel and crushed rock will be brought in, together with all equipment necessary to do the work.

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Thomas Harrell contemplates the erection of a brick and rock crushing plant at Eastland, Tex.

THE MEANS GRINDING PANS



For Grinding Wet, Semi-Dry and Dry materials. Made in sizes adopted by the best judges. We are in position to solve your grinding problems.

SINGLE, DUPLEX OR BATTERY INSTALLATIONS OF 8, 9 AND 10 FOOT PANS.

Write for Descriptive matter and prices on Pans Also Bulletins on Sewer Pipe and Tile Presses, Elevating and Conveying Machinery, Trucks, Barrows and other equipment for the clay products manufacturer.

THE TORONTO FOUNDRY & MACHINE CO.
Toronto, Ohio

Rutland Company Puts on Night Shift

The Rutland (Vt.) Fire Clay Co. has been obliged to put on a night shift in the grinding department in order to keep up with orders. "Business has never been so good," President A. W. Perkins said. The company also is boring to locate a new shaft for mining red clay used for many of its products.

New \$1,000,000 Concern at Staunton, Va.

C. H. and K. R. Forry of Newark, Ohio, and associates have formed the Federal Clay Products Corporation, at Staunton, Va., with a capital stock of \$1,000,000. A. Lee Knowles has been elected secretary-treasurer of the company which owns 2,300 acres of shale land and plans to erect a brick plant with a capacity of 100,000 brick per diem.

To Enlarge Plant to 80,000 Capacity

A further addition to the plant of the West Virginia Paving & Pressed Brick Co., is to be constructed immediately, it has been announced by General Manager D. D. Evans, to bring the total capacity up to 80,000 brick per day. The plant is now producing about 70,000 brick daily since the opening of the newest addition, which improvement cost in the neighborhood of \$50,000. Five new tunnels will be driven before the plant's final enlargement is completed. The improvements mean the purchase of more machinery, conveyors and the construction of a new dry pan.

The LETTER BOX

A Place Wherein Letters
That Have General In-
terest Are Published and
Commented Upon

Does Not Agree With "Tell the Workers"

Readers of *Brick and Clay Record* will perhaps recall the article published on page 853 of the November 4 issue, under the title "Tell the Workers". The article quoted much of the doctrine spread by Boyd Cable, whose varied career enabled him to speak from the standpoint of both employer and employe. The essence of the article was that employers should become acquainted with their men and take a greater personal interest in them than is customary.

We are publishing herewith a letter from one of our readers who comments on the above article and who prefers that we keep his name confidential.

Editor, *Brick and Clay Record*:

I have just read with considerable interest and about the same amount of amusement, the article appearing under the title of "Tell the Workers". In this letter, I do not wish to make any remarks which may sound personal but in my opinion such an article, excepting that it allows its author to get rid of a certain amount of hot air and to pose in the spotlight of publicity, is not worth the paper it is written on. It cannot and will not produce any better conditions in the factories.

Boyd Cable used up a certain amount of time and energy and it is to be presumed with some of the government's money; and despite all his efforts whenever a British workman had arguments, real or fancied, he just went on a strike as usual—practically all of them except the faithful few who knew what was at stake. The situation can best be described in a phrase recently coined by Mr. Schwab "they kept working and did not talk." Any one who is at all conversant with industrial conditions in England during the war can easily verify this.

To come to conditions here which are entirely different on account of the mixed nationalities, if you sow the wind you know what you can reasonably expect to reap. While there was a surplus of labor we did not hear so much of these campaigns to "Tell the Workers". On the contrary he was frequently told something quite different. Now that for the time being the workman is in the saddle there is all this advice being offered and efforts made to prevent him going either too fast or in the wrong direction. If the men have any sense, and it can safely be presumed that the majority have, they can be trusted to direct their own personal affairs. If they are given some incentive such as increased wages, such increases being dependent upon increased production, they will be able to exist without the smile of the foreman, superintendent, or even the boss or man higher up.

One of the main causes of low production is that many times when a piece work price has been established and we can presume before it is settled, that such a price is low enough to enable that particular article to be sold at a profit, it is frequently found that workmen by speeding up and putting into practice some ideas of their own, are able to produce so much more work and make so much money that immediate steps are taken to reduce the price agreed upon. This practice is so common that workmen deliberately slow up their efforts knowing that it is the only way to avoid a reduction in price. Many instances of this kind have come under the writer's notice and doubtless many of your readers are just as familiar with some instances.

While the writer does not doubt that eventually some benefit will be derived from the better treatment which the men are receiving, he would respectfully suggest that all these improvements which are contemplated at the present time should be introduced gradually. Otherwise, the com-

INSURANCE AGAINST FIRE At Actual Cost

The Manufacturers of Clay Products at Reciprocal Insurance Bureau, offers you an opportunity to come in and insure against fire with preferred risks that are of your own class and engaged in the same line of business. This Bureau saves you the expense of paying for (1) enormous overhead, (2) agents' commissions, (3) companies' profits. You are assured of greater safety, co-operative assistance of a practical kind, and better service.

A large Brick and Tile plant owner writes:

"We can truthfully say we have never had more prompt and satisfactory adjustment of claim than in this case."

Write us for rates and our plan to render better service and greater safety.

**Manufacturers of Clay Products at
Reciprocal Insurance Bureau
29 S. LA SALLE ST., CHICAGO**



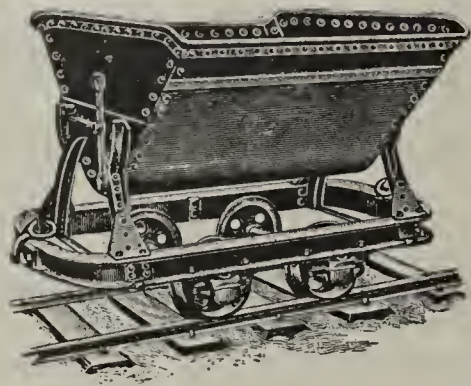
Light steel rails

We saved the day for the Clay and Coal Operators in War Times by furnishing BUCKEYE MINE RAILS, whenever and wherever needed, and while many other Steel Mills were running exclusively on other material, you could not have operated without us at that time.

Now, in Times of Peace, we ask that you do not forget us, as we can, and will render the same unexcelled service, and furnish the same high quality of material. "Buckeye means best", and BUCKEYE LIGHT STEEL RAILS are better still. All sections from 12 lb. to 40 lb. inclusive always in stock for quick shipment.

Let us have your inquiries, and we will take the chance of developing them into orders on our books.

**THE BUCKEYE ROLLING MILL COMPANY
STEUBENVILLE, OHIO**



BIEHL CONSTRUCTION

All Biehl Cars are built to work three 8-hour shifts every day. They require no off-days because their manufacture is completed when they leave our factory. All parts made of the best material and workmanship.

Standard types on short notice. Our Engineering Department will be pleased to take care of your special requirements. We also manufacture Platform and Dryer Cars, Steel Wheels, Dump Buckets, Barrows and other equipment. If you haven't a copy of our new catalog No. 8c, we will be pleased to send you one. Write to

THE BIEHL IRON WORKS, Inc.

Office and Works, Reading, Pa.

Branch Office: Detroit, Mich., 725 Ford Bldg.

Wonham, Bates & Goode, Inc.,
17 Battery Place, New York City

Joseph M. Brown & Co.,
Peoples Gas Bldg., Chicago



We specialize in steel car wheels

plete "right-about-face" which they are witnessing may cause such a shock as to prove fatal to the workman.

One reason why it is the writer's opinion that this "Tell the Workers" campaign is bound to prove a failure, is that the workers have unfortunately for us, a fairly good memory and it does not have to be so good at that. They firmly believe that this idea of personal touch and asking how many teeth the baby has this morning is due simply and solely to the present existing shortage of labor and that should conditions become as they were a few years ago these "tell the workers how much we love them" campaigns would soon be a thing of the past. Most workmen are too busy to rush into print at every available opportunity but could you go amongst them as most of us do you would find that the sentiments expressed in this letter are held by quite a few of them.

The writer believes that it is good policy to let the men know that under all circumstances you will, as far as you are able to, hold firmly the scales of justice but he does not believe that the majority of workmen are like the school children in the deserted village who are so aptly described when waiting for the first appearance of the master.

"Well had the boding tremblers learned to trace

The day's disasters in his morning face."

Does any sane man think that the today workman, be he American or Slav, waits with anxiety to see whether the boss is smiling today? Not so that you can notice it, and it is well that he does not. Such a relic of feudalism can easily be dispensed with.

In conclusion, may I be permitted to point out that some manufacturers are today, and some have been for years, working on a plan that does not satisfy itself with a distribution of words or even the smiles, but shares each year some of the profits made by the company and they are firmly convinced that the money which is thus distributed is brought back to them many fold by the care, foresight and diligence of the workmen who are thus encouraged by some definite and worthy-to-be-copied plan.

Yours very truly,

Vox Populi.

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Keep in Mind January 27, 28 and 29

Arrangements are progressing for the eighteenth annual convention of the Canadian National Clay Products' Association, which will be held in Toronto, January 27, 28 and 29, 1920. This is to be a reunion convention and it is expected that all the plants which were closed down during the war, but which are now operating, will be represented. The entertainment committee, under Charles A. M. Millar, is at work and there will be something "doing" all the time. Announcements regarding papers to be read at the convention will be made at an early date.

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New Factory to Manufacture Refractories

The Gates Refractories, Ltd., has been incorporated by J. W. Gates, 382 St. James Street, Montreal, Que., to manufacture the Gates patent furnace fire brick shapes, previously manufactured under contract by old established fire brick firms. All special shaped high-grade fire brick for every industrial purpose will be manufactured. Dry and wet crushers have been installed at the plant, with the necessary conveying equipment. A drying room 60 by 60 feet has been erected at the rear of the factory. The floor of this room is of tile underneath which is the steam piping system for drying the brick as they come from the molds. At the side of this building are the burning kilns. Two are already in operation and two more of sixty tons capacity each will be installed in the near future. It is planned to double the present capacity of 300 tons per month before the first of the year.

BUCYRUS



Boost Your Production

You can do it with the sure, steady output, rugged construction and high power of

Bucyrus Revolving Shovels

A BUCYRUS can improve the quality of your brick by obtaining a more thorough mixture of your bank from top to bottom. It can cut your costs and increase your output.

Let our representative look over your property and tell you how.

All sizes of revolving and standard railroad type shovels and drag-line excavators.

Send for bulletin B.

BUCYRUS COMPANY

SOUTH MILWAUKEE, WIS.

New York, Cleveland, Birmingham, Minneapolis, Denver,
Portland, Ore., San Francisco, Salt Lake City.

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

Increase Capacity to Supply Link-Belts

A new addition to the Belmont Foundry of the Link-Belt Co., Indianapolis, Ind., has been announced. They state: "The extension to our Belmont Foundry virtually consists in completing our new furnace buildings Nos. 7 and 8, but for the present we will install only furnace No. 7, which will be 15-ton capacity instead of 10 tons like the present furnaces."

The necessary machinery is also being purchased—such as rolling mills, sand blast and other foundry equipment needed to take care of the additional capacity. The building will be about 70 ft. wide by 400 ft. long, and when finished it will complete the foundry as originally laid out.

These additions are being made in order to give better service to their customers, and take care of the constantly increasing demand for Link-Belt malleable iron chains for elevating, conveying and power transmission purposes. The main office is located in Chicago.

* * *

Southern Office for Schaffer

The Schaffer Engineering & Equipment Co., modern engineering equipment specialists, and manufacturers of the famous Schaffer poidometer, have arranged for a Chattanooga, Tenn., office to handle the Southern territory. The main office of the company is located in Peoples Bank Building, Pittsburgh, Pa., but clay products manufacturers in the southern states can now have their inquiries taken care of by the new office, in James Building, Chattanooga, Tenn.

* * *

Stanbrik Interlocking Tile

Edward S. Stanton, of 419 Erie Building, Cleveland, Ohio, has had opportunity to have a number of the buildings in the Cleveland district erected with Stanbrik, which is a hollow interlocking brick. The photograph here shows apartment building that was made entirely of Stanbrik, including side, rear and court walls. This was done at a considerable



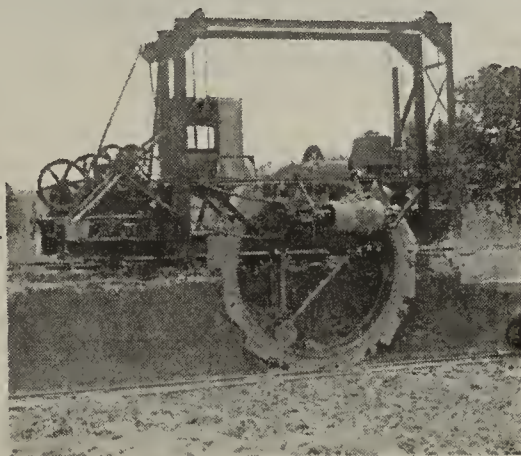
Apartment Building Erected Entirely of "Stanbrik"

reduction from the estimated cost of common brick. The contractor for this building made the statement that some of the bricklayers lay about the same number of Stanbrik a day as they do of solid brick. There is a further advantage by reason of the fact that plaster is applied directly to the Stanbrik walls without using furring and lathing.

Buckeye

Traction Digger

As we couldn't better the perfect mixing, we improved the Buckeye construction to handle increased capacity and to lower your digging costs.



You want these Advantages

The Buckeye Digger costs less in first cost than any other types of traction diggers.

Operating and maintenance costs are surprisingly low. It operates in pits that are too soft for heavier type machines.

It gives a better mix than any other practical clay digging machine.

That these advantages are of practical benefit to clay manufacturers is proved by the fact that more and more Buckeye Traction Diggers are being used in clay and shale pits than ever before.

Here are a few users:

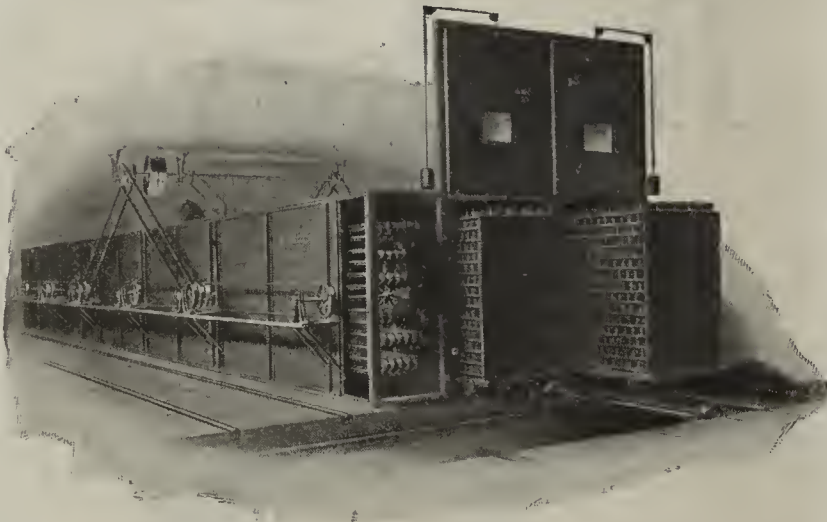
Crossman Company
New York, N. Y.

Haeger Brick & Tile Co.
Aurora, Ill.

Edgerton Clay Products Co.
Edgerton, Ind.

May we send you data? Ask for
a copy of "Digging Clay for
Profit."

The Buckeye Traction Ditcher Co.
Findlay, Ohio



Your Drying Problems

Our Research Department is equipped and available to investigate the drying of your products, and also to plan an equipment in which your drying may be performed, economically, quickly, and absolutely under control, in brief, satisfactorily.

You may obtain this service without incurring any expense or obligation.

Let Us Know Your Requirements

"Proctor" for Clay Products
DRYERS

THE PHILADELPHIA TEXTILE MACHINERY CO.

Drying Machine Specialists

Seventh Street and Tabor Road, Philadelphia, Pa.

CHICAGO, ILL.
Hearst Building
PROVIDENCE, R. I.,
Howard Building

CHARLOTTE, N. C.
H. G. Mayer, Realty Bldg.
HAMILTON, ONT., CAN.
W. J. Westaway & Co.
Main & McNab Streets

63

Stanbrik is a double hollow wall and face brick all in one. There are no thru mortar joints so that dampness is absolutely prevented, yet Stanbrik has the same strength as a solid brick wall.

Mr. Stanton has just recently decided to grant permits to clay-products manufacturers in non-competing territory, the right to manufacture Stanbrik. Any clay-products manufacturer who is interested should write to Mr. Stanton and secure literature and full information relative to this product.

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Manganese for Face Brick

E. J. Lavino & Co., of Philadelphia, Pa., state that they are exceptionally well situated for supplying ground manganese to manufacturers of face brick.

Before the war, Caucasian manganese, due to its high quality and uniformity, had come into general favor, but with supplies from this section of the world shut off, the Lavino company transferred its activities to the South American field, building up a large organization in Brazil for the purpose of importing this important commodity at first hand.

The consumption of dioxide or chemical manganese runs into a large quantity, many thousands of tons being used in the manufacture of dry batteries, without mentioning the brick or other industries taking same, but a much larger quantity of furnace or metallurgical ore is used in the manufacture of ferro manganese for the steel trade.

Messrs. Lavino state that they have been operating four blast furnaces in the production of this commodity and another alloy known as Spiegeleisen. Under the circumstances their total importation embracing chemical and metallurgical ore have reached an exceedingly large total.

One particular grade of South American ore is used for the brick trade, it having been found that the ore compares favorably with that previously imported from the Caucasus. Messrs. Lavino state that they now have Caucasian ore at their plant, but the price, as can be surmised, is very high and lower figures can be named on the South American ore.

The Lavino company express their willingness to submit samples of manganese without charge, and welcome inquiries from brick manufacturers now using manganese, or other firms contemplating the manufacture of manganese face brick.

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Throw Out the Torn Belt?

One day when the foreman of the Bach Brick Company was absent on account of illness, an accident happened to the brick machinery pulley shaft. By the time the machinery was brought to a standstill, the 12-inch Stanley brick-machine drive had a tear ripped in it for several feet.

Apparently the belt was ruined, and it could only be thrown away, but—and here is the interesting feature of this story: The foreman, next day, cut from it an 8-inch belt, put it on the crusher forward and reverse drive, where it has been doing a good day's work, 312 days in the year, for the past three years.

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This is evidently the season for changing addresses, and the Manufacturers Equipment Co., Dayton, Ohio, announce that the office of their Western representative, G. H. Smith, Kansas City, Mo., has been changed to 3309 E. 37th Street.

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The Biehl Iron Works, Inc., Reading, Pa., manufacturers of industrial cars, are represented in the Chicago territory by Joseph M. Brown & Co., Peoples Gas Building, Chicago.

✻ ✻ ✻

The removal of the general offices of the Atlas Powder Co., from Wilmington, Del., to 140 North Broad Street, Philadelphia, Pa., was effected October 18, 1919.

✻ ✻ ✻

The Canadian office of the Philadelphia Textile Machinery Co., in charge of W. J. Westaway & Co., has been moved from the Sun Life Building, 72 James Street, N. Hamilton, Ont., to Main and McNab Streets, Hamilton, Ont., Canada.

Alsey Brick & Tile Co.	1062
American Clay Machinery Co.	1081-1082
American Dresser Tunnel Kilns, Inc.	1028
Arnold-Creager Co.	
Associated Business Papers	1096
Atlas Powder Co.	1025
Baird M. & Mfg. Co.	1070
Ball Engine Co.	1067
Barber-Greene Co.	1062
Biehl Iron Works	1069
Bonnot Co.	1012
Bristol Co.	1060
Broderick & Bascom Rope Co.	1060
Brookville Truck & Tractor Co.	1086
Brown Instrument Co.	1030
Buckeye Rolling Mill Co.	1066
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BRICK and CLAY RECORD

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The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups," to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

WHERE WILL AMERICA'S "GET RICH QUICK" MANIA AND EXTRAVAGANT LIVING END?

Consumption of Imported Luxuries Alone Increased 125 Per Cent., While Building Loans Decreased 60 Per Cent. in Typical Section Over Four Year Period—Nation Concerned in Division of Existing Values Rather than Creating Wealth by Investment in Land and Buildings

WE ARE LIVING in a situation and under a condition in the United States today that is at once comparable to the gold and purple dawn, as well as the blackest midnight. No other outlook in the history of this or any other nation, so far as we can remember, has ever been witnessed that would equal the present dual circumstance.

A GLANCE INTO THE NIGHT

First, let us look upon what is obviously the dark side. It would simply be rehearsing what is thoroly familiar to every reader to recall and review the unprecedented number of strikes and industrial disputes and disturbances which have occupied the attention of the public for nearly twelve months.

What the strikes have not done in the way of creating and fomenting unrest and uncertainty, the high cost of living has filled in with effective force, providing radical agitators with ammunition for creating further disturbances. Add to this the wide spread prevalence of crime and violence, race riots, an unfinished international peace, and a score or more small wars still raging in Europe, and you have the most diabolical concoction that has ever been poured out to stifle and suffocate modern civilization. Causes far less noteworthy have undoubtedly brought on panics in the past.

That hard times are not at our heels is something that amazes and surprises both manufacturer and merchant.

PROSPERITY ABOUNDS

But it is a matter of common knowledge that the country is prosperous. A composite of new building, crops, bank clearings, immigration, commodity prices, railroad earnings, stock prices, and so forth, reveals a condition of national and individual affluence not paralleled at any time during the past fifteen years, and certainly not before that.

The majority of people are earning more money today than ever before in their life. Workers who never made more than \$15 a week before the war, have for four successive years doubled or tripled that income. The result is that every one is feverishly optimistic. People are in a buying mood. They are paying premiums for automobiles, they are bidding up house rents, they are fighting for theatre seats. **Everybody is buying.** It makes little difference whether it is for securities or furniture, people are willing to pay the top price because they have the money and they think they can always maintain their present income.

LUXURIES LEAD

A closer examination of the present buying mania, with its resultant high prices, is the enormous growth in the consumption of luxuries. According to statistics from the office of the Collector of the Port of New York, demand of the American public for imported luxuries is more than 125 per cent. greater than last year; the demand for necessities has also risen, but not to so great an extent; total duty collected on all imports at this port during July, August and September of this year was \$224,548,782, as against \$152,157,757 for the corresponding period of last year. In order to verify the significance of these figures, it is only necessary to turn to any one of a dozen well known national magazines and notice the

amount of advertising space that is devoted to cosmetics, expensive clothing, high priced confections, fancy foods, jewelry, and so on down the line of attractive but dispensable commodities.

We are fast becoming a luxury loving people. Nothing is too exquisite or excellent for His Majesty, the American citizen. His and her demands are leading the costumer, jeweler, merchant, haberdasher, pharmacist, box office attachee, railroad ticket agent, and an army of servants, valets, and so forth, a merry chase to supply their wants. All to what avail? To lavish wealth upon fleshly desires, bringing in ruin and corruption. This kind of spending does not add to the permanent wealth of the nation; rather it destroys wealth and tends to produce a race of careless, thriftless, shiftless spenders.

BUILDING INVESTMENTS DECLINING

It is estimated that from 1913 to 1918, the total loans of banks in the United States increased 54 per cent.; individual bank deposits increased 59 per cent.; stocks and bonds owned by banks and insurance companies increased 68 per cent. and savings increased 200 per cent.; **while during the same period** the combined real estate loans of banks, insurance companies and building and loan associations increased only 28 per cent., that is, from \$6,170,000,000 to \$7,890,000,000. It is probable that loans by individuals have decreased correspondingly, if the figures of New York City may be taken as typical of the whole country.

The average amount of money loaned annually on mortgages in Manhattan, the Bronx and Brooklyn during the ten year period from 1905 to 1914, inclusive, was \$472,000,000. The average annual amount of mortgage loans from January 1, 1915, to February 1, 1919, was \$189,000,000, **a decrease of sixty per cent.**

As a nation we should be now creating new values, rather than concerning ourselves with the division of values already created. Whether this division be thru barter, speculation or wage adjustment, it is dividing—not creating.

The continued use of accumulative funds for short term credits may be a large factor in maintaining inflation, and even in facilitating speculation, at a time when the absorption of funds into loans based on land and construction might have healthfully retarded circulation and **created permanent wealth.**

MUCH BUILDING IN PROGRESS

There is an enormous amount of construction underway and being planned. There could be a great deal more. **If the man or woman who is spending extra money buying luxuries or worthless stocks and bonds would invest this wealth in land and a home, it would mean a great deal more to the welfare of the nation.** It is hard to find a legitimate banker who in his right senses would loan any money upon such collateral as theatre ticket stubs, empty cigar boxes, wild-cat mining "securities," flashy diamonds, used automobiles, fur coats, and so forth. Economic experts are agreed on the fact that we cannot always expect to ride upon the crest of the wave of prosperity. There must be the valleys of depression to even up matters. In other words, the rule of averages still holds good. A home and real estate is nearly always a substantial and permanent asset.

PROMOTES THRIFT AND ECONOMY

Homes do not breed bolshevists, anarchists or syndicalists. They promote thrift and economy.

Many homes are sold on the installment plan. Five hundred or a thousand dollars is deposited and the remainder of the purchase price is arranged in monthly or quarterly payments. When one takes on an obligation such as this, it is needless to say that every effort will be made to wipe out the indebtedness as quickly as possible. Extravagance and the consumption of dispensable luxuries will largely disappear; thrift and economy will occupy the scene and earnings will be invested in permanent security.

It is openly apparent that every clay products manufacturer should be interested in any

(Continued on Page 1079)

INDUSTRY DEMANDS ATTENTION *to* FUEL NEEDS

Construction Industries Stand United for First Time in History and Demand Consideration of Their Situation With Regard to Fuel and Car Supply—Building Industry, Which Is Third Largest in United States and Has One-Third of American Business Interested in Its Activities and Whose Products Represent One-Third of National Shipping, Faces Absolute Shut-Down if Some Action on Coal Production Is Not Taken

WITH ENTIRE GOOD NATURE on both sides but nevertheless with definite and conclusive results a group of leaders in the clay products industry, backed responsible Government officials into a corner on Monday, November 24, and obtained a show-down on the fuel and car situation. As a result of this laying of the cards on the table, the industry can approximate what is what in a situation that has, this past few weeks, been the subject of infinite conjecture, speculation and gossip, all contributing to a feeling of uneasiness in trade circles. It is a situation that has been the more worthy of careful consideration in that it involves problems that will not be fully disposed of even with the settlement of the coal strike.

Clay products manufacturers obtained what satisfaction they gained in Washington not single-handed, so to speak, but incident to a conference arranged by the National Federation of Construction Industries, which was brought about thru the efforts of Ralph P. Stoddard, secretary-manager of the Common Brick Manufacturers' Association of America. Telegrams were sent by John C. Frazee, president of the National Federation of Construction Industries, to the secretaries of the two hundred associations in that organization, asking them to meet at the Powhatan Hotel, Monday, November 24, to discuss the relation of the construction industry to the present coal and transportation situation. This telegram to the various secretaries was a direct result of the following letter sent to Mr. Frazee by Mr. Stoddard:

"The members of this organization feel strongly that some appeal should be made to the Railroad Administration which now has in charge the fuel situation to see that the minimum of interference with the production and delivery of building materials results from whatever contingency the coal strike or natural coal shortage may produce. I have discussed this matter also with the executive officers of the Hollow Building Tile Manufacturers' Association, the American Face Brick Association, and the Face Brick Dealers' Association and they share the same opinion.

"We fear that in the handling of the fuel situation the place to which building materials were relegated during the war may have an influence. In other words, I personally feel that some aggressive move on the part of the building industries is necessary to impress those in authority that building today ranks among the first essentials. Even in the popular order of food, clothing and shelter we should be the third to receive consideration, and the matter of shelter, as you know, enters strongly into the production of food and clothing.

"With the serious shortage of buildings of every type

everywhere in the United States we believe that serious consideration should be given to the production of the building materials at this time. Speaking for our own commodity alone, you realize that a great many brick plants are equipped for summer production only. These plants will shortly be closing for the winter and every brick that it is possible for them to turn out between now and closing time is needed for the construction under way.

"The same preference that was given to war construction before the signing of the armistice should now be given to peace construction which is just as important to the whole people of the country at present as war construction was to the needs of the army before.

"What, if anything, has the National Federation of Construction Industries done and what are you doing along this line? Do you feel that it would be a proper activity for your association to represent all the construction interests in going before the Railroad Administration to urge proper consideration of the fuel supply for building material producers?

"Many brick plants already have been forced to shut down because their shipments of coal have been diverted to railroad or other uses. Fearing further shortage, their plants, aiming only to burn the brick already in the kilns, have ceased the manufacture of green brick.

"My fear is that, unless we as an industry make an aggressive demand, other industries also aggressive will be taken care of to our disadvantage and unquestionably many of those industries are not so important to the country at this time as is the construction interest. As you well know, the country today is fairly begging for housing. The manufacturers are handicapped with labor shortage and production is far from normal. In many of the larger centers the best of the past summer season has been wasted by strikes and it is only during the past few weeks that work has really gotten underway. This construction should, as far as possible, be completed, but this will be impossible if there is any serious interference with the providing of fuel and empty cars to brick manufacturers thruout the country.

"Several national associations located in Chicago have considered sending a representative to Philadelphia to talk with the officers of your organization. Could we help you in preparing claims by doing this? I will much appreciate your views on the subject."

CLAY PRODUCTS INDUSTRY WELL REPRESENTED

Members from thirty associations representing every phase of the industry—operating, distributing, building and pro-

tection, were present at this assemblage. However, the brick and other clay products men had so comfortable a majority in the assemblage of building material representatives and their industry was obviously so acutely affected by coal shortage that the conference just naturally made the clay industry's problems a primary and principal consideration. Incidentally it may be mentioned that the gathering was wholly representative inasmuch as spokesmen were present from the trade associations that are not affiliated with the National Federation of Construction Industries.

In order to conserve time and get to the vital points without delay, the delegates who responded to the call of the National Federation devoted half a day to a preliminary confab among themselves. Mr. Stoddard was requested to state the case of the construction industry as viewed by him and which was embodied in his letter to Mr. Frazee. All present concurred in his views and as a result a committee was appointed on which Mr. Stoddard was a member, to draw up a program which contained in the main, the substance in the letter quoted above. Then with a duly ordered program of addresses and primed with questions touching every vital issue involved, the whole body went into conference with officials of the United States Railroad Administration. On behalf of the Railroad Administration the meeting was presided over by Robert C. Wright, assistant director of the Division of Traffic but, with the plea that his subordinates were more intimately familiar with details, he permitted most of the talking to be done by B. P. Phillippe, manager of the Fuel Division, and W. C. Kendall, manager of the Car Service Section.

Executive Secretary John C. Frazee and his right-hand man, J. L. Clarkson, opened on behalf of the Federation with a forceful plea for recognition and consideration if the coal situation or the car situation should make it necessary for federal officials to pick and choose what industries should be permitted to continue "business as usual." Attention was directed to the fact that the construction industries contribute one-third of the total tonnage of the railroads and give employment to more men than any other industry outside of agriculture, but this was but preliminary to strong argument that in whatever action should be taken or whatever policy pursued the Government should treat the construction industry as a whole rather than to differentiate between different branches of it—a form of discrimination that it was insisted would unbalance building operations.

WAR-TIME "PRIORITIES" RESURRECTED

What might be accounted the keynote of the conference was struck after the railroad officials had revealed, in answer to questions, that they have no alternative, under the instructions issued by Fuel Administrator Garfield than to follow, all down the line, the sequence of "priorities" established by the Fuel Administration during the war and resurrected for the present emergency. All the speakers at the conference felt that this works a serious injustice to the construction industries. As Mr. Clarkson explained, the construction industries do not expect to be given place "in the first four priorities" (transportation, public utilities, domestic use and hospitals and asylums) whose needs are barely taken care of by the 40 per cent. of normal production of coal that is now obtainable but it is felt that it is rank injustice to keep the construction industries "way down the line" in the position to which the industry was relegated in war-time when peace-time construction was accounted "nonessential."

In proof of the fact that the construction industries now occupy a very different relation to the general scheme of national affairs there was stressed the influence of the housing dilemma upon social unrest. The theory was advanced that neither wage advances, profit sharing, nor any other

panacea would remedy the unrest of the wage earner as would the speedy provision of comfortable homes in adequate numbers. The railroad officials were obviously impressed with this aspect of the subject altho they commented that Dr. Garfield and his aids should needs be converted also to this theory of the important part that the building industries are playing sentimentally as well as literally in the era of "reconstruction."

After Mr. Phillippe had stated frankly that the Government regarded the coal situation as "precarious" the conference spent some time in consideration of the peculiar situation which confronts the clay products industry owing to the fact that assurances of future fuel supply are essential for continued operation and that sudden interruption or drastic curtailment of coal will involve heavy losses with respect to the commodities in process of manufacture. It was made clear to the federal arbiters that the brick manufacturer, for example, is in a very different position with respect to his fuel supply from the manufacturer in the average line who can, without especial hardship, keep his factory in operation as long as coal is at hand and then shut down suddenly. In the opinion of the spokesmen for the industry who discussed this phase of the proposition manufacturers of clay products need days or weeks of warning before fuel supplies are cut off. The railroad officials conceded that the position of the clay products manufacturers is exceptional, but added, parenthetically, that they thought that the industry had not taken as seriously as it might the warning issued on November 1 to the effect that stoppage of fuel supply was likely to be necessary. As a climax to this discussion the straight question was put to Mr. Phillippe whether, if he were a brick manufacturer and had his present knowledge of the fuel situation, he would shut down forthwith and he replied that unhesitatingly he would.

There was considerable discussion over interests that find themselves in especially unfortunate predicament—for example the producer whose two gypsum mines are flooded because he cannot get coal to keep the pumps in operation and the various interests whose insurance is imperiled because they have no fuel with which to keep operative the fire protection systems at their plants. The railroad officials were positive that there was no desire to go to such lengths in withholding coal and asserted that any manufacturer or producer who thus feels the fuel pinch can probably get relief by appealing to his Regional Committee of the United States Railroad Administration, or if he cannot get action there can appeal to the Central Coal Committee. In answer to questions it was explained that present powers do not permit the Fuel Administration to confiscate coal from the stock piles of manufacturers but that this might be changed by executive order if the situation grows more serious.

POLICIES IN CAR SITUATION DISCUSSED

The car situation received less attention than the fuel situation because the railroad officials pointed out that they were not refusing transportation to anything and that with the shrinkage in the volume of traffic due to the scarcity of coal there would be all the more cars available to take care of the stuff that was ready to move. There was, however, discussion of certain permanent policies that would prove helpful to the industry as, for example, the studied effort that is to be made to smooth out the "peak" in which construction material traffic has heretofore concentrated in a few months each year. The railroad officials also promised to lend the weight of their influence to induce the various states to repeal or revise the highway laws that prevent payments on partial estimates. If the states will follow the example of Ohio and allow payment up to 90 per cent. for material on the job it will enable manufacturers of paving

brick, etc., to distribute traffic much more equitably thru the year.

Among the men well known to the trade who took part in the conference there may be mentioned Maurice B. Greenough, secretary of National Paving Brick Manufacturers' Association; Wm. C. Perkins, Eastern Paving Brick Manufacturers' Association; F. M. Evans, Jr., and Alvin Hill, of the Association of Vitrified Clay Manufacturers; Ralph P. Stoddard, secretary-manager of the Common Brick Manufacturers' Association; L. Perry West, of West Bros. Brick Co., of Washington, D. C.; Theo. A. Randall, secretary National Brick Manufacturers' Association; J. A. Smith, representing the Traffic Committee of the American Face Brick Association; John H. Miller, of National Brick Manufacturing Co.; Virgil G. Marani, of the Gypsum Industries Association; H. E. Stringer, chairman of the National Terra Cotta Society; etc., etc.



Some Strike Facts

The building trades led the list in the number of strikes reported by the Bureau of Labor Statistics, during the months of April, May and June, 1919, numbering 200 out of a total of 974 strikes. In this industry there were four lockouts out of a total of 42. Metal trades are next on the list with 176 strikes and 13 lockouts; textiles and clothing number 78 and 57 respectively with one lockout each and miners 51. Lumber and timber are credited during the same period with 13 strikes. In 536 strikes and 26 lockouts, the employees were reported as connected with unions; in 18 strikes and one lockout they were not so reported. Massachusetts and New York led the list of strikes with 110 each, Pennsylvania had 92, Illinois 86 and Ohio 65. Seven hundred twenty-three strikes out of the 974 were east of the Mississippi. Of the cities, New York had the largest number of disturbances—37; Chicago had 28, Detroit 26 and Boston 17.

During this quarter the strike involving the largest number of persons was probably that of the clothing workers in New York. In 480 strikes for which the number of persons on strike was reported, nearly 500,000 strikers were involved, an average of over 1,000 per strike. In about three-fourths the question of wages and hours was prominent and in nearly one-fourth the question of wages or union recognition or existence was involved. Of 367 strikes, 22 were settled in favor of the employers, 129 in favor of employees and 112 were compromised. The average duration of 210 strikes was 29 days.

In the first quarter of the year, the building trades were third in the list numerically, 62 out of a total of 584 strikes, being preceded by the metal trades and clothing. Lumber and timber were not listed for this quarter. Out of 313 strikes for which the number of persons on strike was reported, there were more than 800,000 strikers, an average of 2,587 per strike. The causes were about the same as for the second quarter and the average duration of 153 strikes was about 37 days.

During the twenty years from 1881 to 1900, the building trades had more strikes than any other one industry—19½ per cent. of the total number—but they involved a fewer number of men per strike; far fewer, for instance than were involved in railroad strikes during the same period, altho these numbered only 5.6 per cent. of the total number recorded. Out of a total of 22,793 strikes reported from 1881 to 1900, 52.8 per cent. were successful, 13.6 per cent. partly successful and 33.54 failed.

The president of the National Association of Manufac-

turers estimates that strikes have cost the United States \$10,000,000 a day in the last eight months, or \$2,400,000,000; that is, \$25 for every man, woman and child in the country.



Canadian Convention January 20, 21 and 22

To prevent conflicting with the convention of the Canadian Building and Construction Industries, at Ottawa, the last week in January, the dates of the Canadian National Clay Products Association's convention have been advanced and are now January 20, 21 and 22, 1920.

All the sessions will be held in the American room, Prince George Hotel, Toronto. The annual banquet will be in the same room Wednesday night, January 21. For the musical program some of the finest talent in Toronto has been engaged while speakers of note, both from the United States and Canada will be in attendance.

The program of papers and addresses will appear in the December 16 issue of *Brick and Clay Record*.



The High Cost of Strikes

Strikes in New York are reported to have cost workers thus far this year over \$28,000,000 in wages, not including shorter strikes of few days' duration; cigarmakers returning to work after four months' strike with but 10 per cent. increase, lost \$10,000,000 in wages; workers in longshoremen's strike returning to work on pre-strike basis of 65 cents per hour and \$1 overtime have lost \$8,000,000, with wage loss of \$4,000,000 to clerks, teamsters, and others affected; unsettled printers' strike "has driven fifty publishers out of New York and reduced payroll \$6,000,000 for this year."



New Jersey Leads in Raw Clay Output

From statistics compiled by the state geologist of the Department of Conservation and Development, New Jersey, it is shown that the production of raw clay in the state during 1918 aggregated 286,474 short tons with valuation of \$1,068,572, a greater output than that shown by any other state in the Union. The quantity was 93,888 tons less than in the preceding year, but the record value of such year was surpassed in 1918 by an amount of \$32,869. The output represented by these figures is in addition to the much greater amount of clay mined by manufacturers for their individual use. The average price per ton in 1918 was \$3.73 as against \$2.72 in 1917. As in years past, fire clay embraces the larger part of production, totaling 240,268 short tons, with valuation of \$918,390.

The total value of clay products produced in the state in 1918 was \$20,768,824, or \$1,760,408 less than in the preceding year. Of this amount, \$12,570,842 represents the pottery production; that of brick and fire brick \$4,843,843; and tile, terra cotta and fireproofing, \$3,354,139.

The grand total for raw clay and clay products, from figures noted above, was \$21,837,396 for the year past, a decline of \$1,727,539 over the valuation of the production in 1917.



Springfield Concern Granted Charter

The Springfield (Ill.) Clay Products Co. has been incorporated, with a capital stock of \$125,000. The incorporators are J. A. Long, W. C. Hoover, C. F. Headington and Earl R. Cartwright. The company will manufacture drain tile, building tile and fireproofing.

NOVA SCOTIA FIRE CLAYS

MAKE GOOD REFRACTORIES

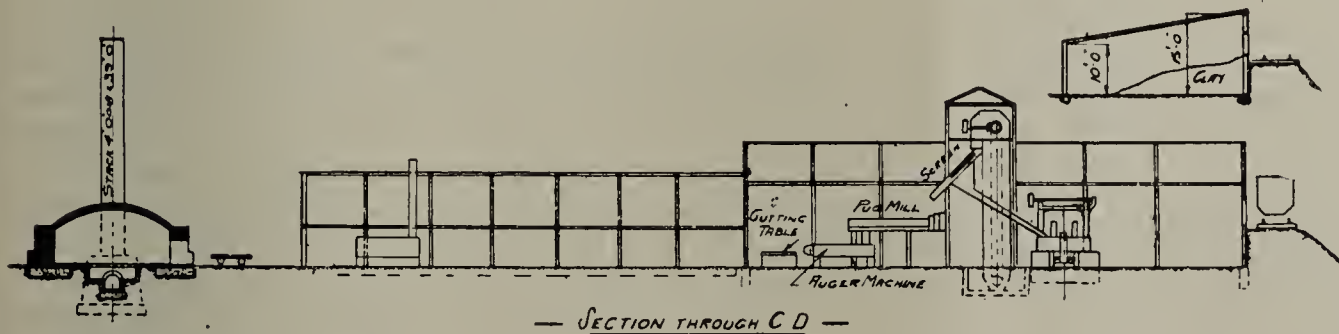
America's Most Easterly Brick Plant Located in Cape Breton Island, Nova Scotia, Uses Coal Measure Clays for Fire Brick Manufacture

IT IS INTERESTING to note that what is probably the most easterly brick plant of the American continent, is located at Sydney Mines on the island of Cape Breton, Nova Scotia. The Nova Scotia Steel & Coal Co., of New Glasgow, N. S., holds extensive coal leases on the island of Cape Breton and operates five coal mines there.

Upon examination it was found that the clay embedded between the seams of coal would make good fire brick, and in 1916 it was decided to build a brick plant at Sydney

in diameter and equipped with eight fire boxes. The product is handled by cars running on narrow gauge tracks from the drying shed to the kilns. Each kiln is filled in about two and one-half working days, the capacity being about 22,000 brick. About $1\frac{1}{4}$ tons of coal per thousand brick are found necessary to burn the ware.

A considerable amount of experimental work has been done in making special brick and burning them at different temperatures and then testing them for shrinkage, porosity,



Section View
Showing
Machinery
Arrangement

Mines. Accordingly, a building 30x60 feet was erected, but this was soon found too small to accommodate the necessary machinery and leave sufficient space for making such shapes and sizes by hand molding as could not be made on the brick machine. The dry shed, too, was immediately found to be too small for the production demanded, hence, the building has been enlarged to 80x72 feet.

Other improvements since the original plant was erected, have been the erection of a second kiln, the extension of the end of the machinery building and a lean-to shed erected alongside the incoming rail track to store clay in the winter, thus preventing it from freezing, and yet giving it good opportunity to be properly weathered.

The machinery consists of a dry pan, elevator, wire screens, pug mill auger, brick machine, dies and a brick cutting table. A stone crusher for breaking up brick bats used for grog, also forms part of the equipment. All of the ma-

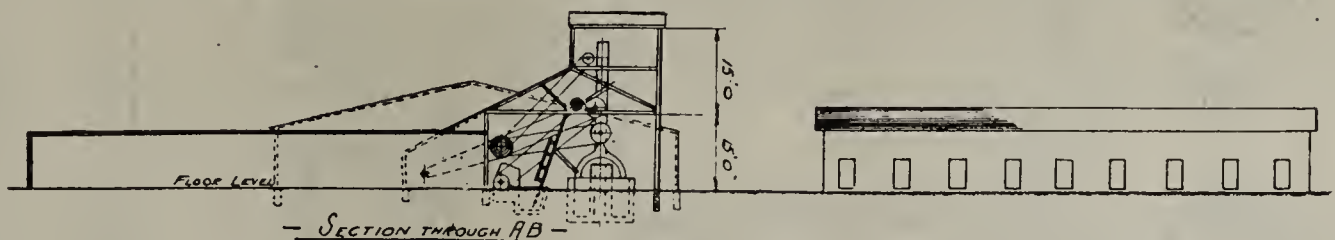
strength, and so forth. After a number of failures, a mixture was found which made a refractory brick suitable for lining iron and steel ladles, for boiler settings, the under flues of coke ovens, and so forth.

The brick for ladle linings should have a low enough fusing point in order that the heat from the molten metal should glaze the surface of the brick and thus prevent molten metal entering between the brick; otherwise, when withdrawing the dead metal, the lining would also come out.

A fairly representative analysis of the colliery clays which the company uses for this class of brick is as follows:

Organic Matter	10.14 per cent.
Silica	54.36 per cent.
Alumina	28.98 per cent.
Ferric Oxide	2.96 per cent.
Calcium Oxide .....	.52 per cent.
Magnesium Oxide	1.26 per cent.

Section View
Showing
Transmission



chinery is belt driven, the main line shaft being driven by a 90 h. p. 220 volts, 3 phase, 60 cycle electric motor. The plant, which has a capacity of five thousand brick per day, cost in the neighborhood of \$27,000.

The dry shed is heated by steam pipes which are placed in ducts beneath the floor, the whole being covered by perforated cast-iron plates. The steam is generated in a horizontal tubular boiler located in this building. There are also two kilns of the round down-draft type, each 22 feet

The fusing point is never over 1350 deg. C.

It is found that the most satisfactory material obtained from these collieries with regard to plasticity, chemical analysis and mechanical adoption, is that obtained from below the coal seam rather than the shales forming the surface of the seams. The brick made from this source are the usual standards, side arches, keys, and so forth, as well as tile of various sizes.

In the manufacture of higher grade refractories such as

for blast furnaces, stoves, coke ovens, open hearth furnaces, and so forth, the addition of other colliery clays had to be made. Many different classes of clay and "rock" from local sources were experimented with, and it was eventually found that very good results were obtained with a mixture of Shubenacadie clay from Truro, N. S. and Coxheath rock from Sydney, N. S.

The Shebanacadie clay is very plastic, easily worked and of good bonding quality. Its fusing point is about 1670 deg. C. and its representative analysis is as follows:

Organic Matter	7.76 per cent.
Silica	71.48 per cent.
Alumina	17.91 per cent.
Ferric Oxide	1.30 per cent.
Calcium Oxide .....	.55 per cent.
Magnesium Oxide	Trace

The Coxheath rock becomes quite plastic when ground and worked, and also has a good bonding quality. It has a fusing point of 1750 deg. C., and its representative analysis is as follows:

Organic Matter	4.46 per cent.
Silica	79.56 per cent.
Alumina	13.87 per cent.
Iron Oxide	2.23 per cent.
Calcium Oxide	Trace
Magnesium Oxide	Trace

A mixture of the above two clays makes a brick which has stood up well under the action of heat and gases in coke oven combustion chamber walls, stove-checkers, gas

producer linings, and other places where highly refractory brick shapes are necessary. Most of these shapes are large and of special design, some of them weighing as heavy as eighty pounds. They are molded by hand and no difficulty has been encountered in their burning. The brick when burned to the finished temperature which is about 1350 deg. C. assume a color from a cream to a buff color. In the burning of the ware, care must be taken in the watersmoking stage and also in the oxidation period to prevent swelling and bulging and consequent bad brick.

To sum up, this plant which was started on an experimental basis, has proved itself a success and demonstrated that good refractories can be made from the Nova Scotia Steel & Coal Co.'s own collieries and from other sources in the Province. The cost of brick made at his plant is generally lower than those obtained elsewhere, but the factor which appeals most strongly to those in charge of operations of the steel plant at Sydney Mines, is that they have on hand a brick plant which is a standby against any delays in delivery or hold-ups due to any cause of the refractories necessary for the extensive steel industry.



Price-Cutting is Peanut Salesmanship

The price-cutter is worse than a criminal. He is a fool. He not only pulls down the standing of his goods, he not only pulls down his competitors; he pulls down himself and his whole trade. He scuttles the ship in which he, himself, is afloat.

Nothing is so easy as to cut prices; and nothing is so hard as to get them back when once they have been pulled down.

Any child can throw a glass of water on the floor, but all the wisest scientists in the world can't pick that water up.

Who gets the benefit of price-cutting?

Nobody.

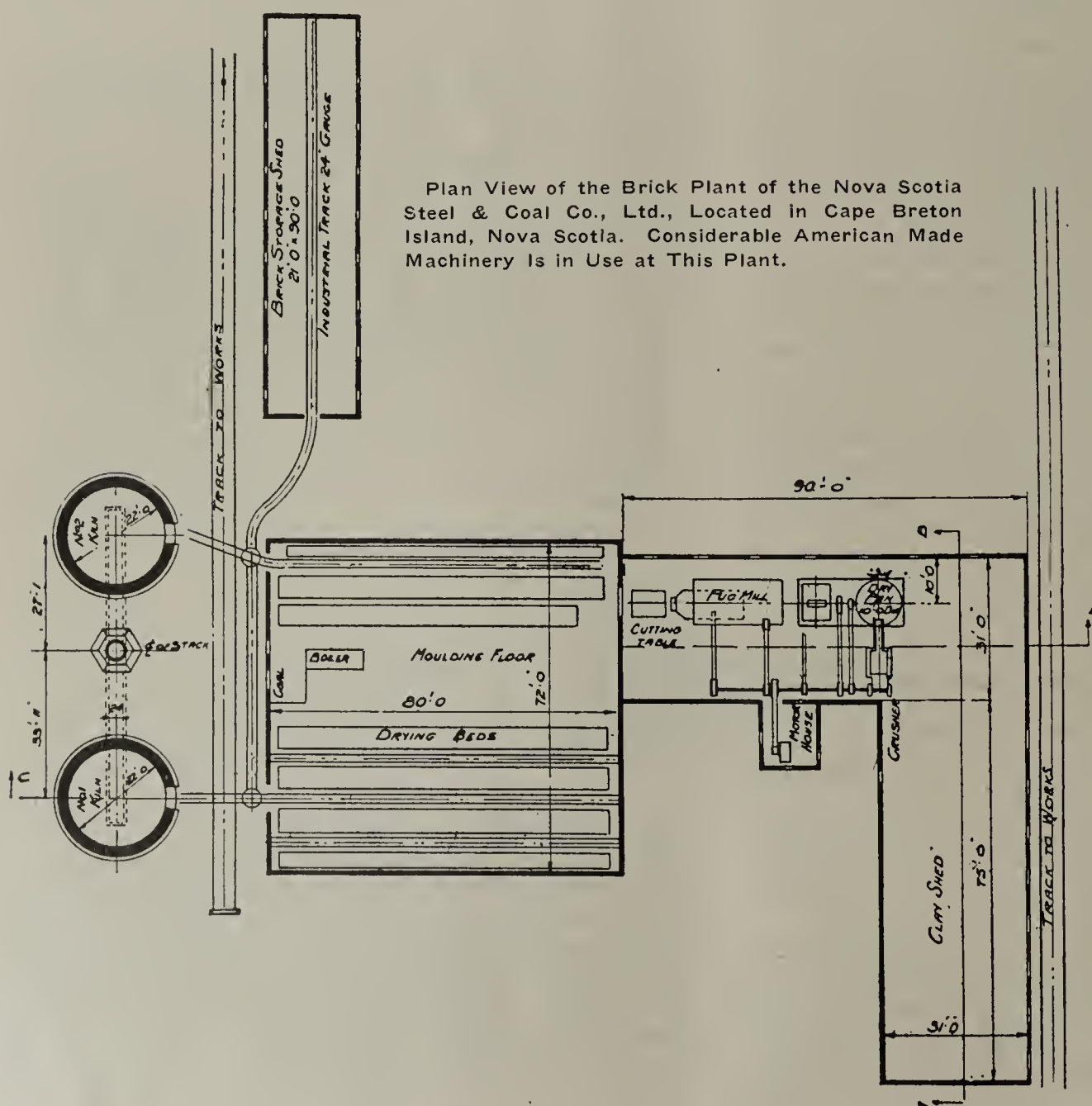
The man who sells makes no net profit; and the man who buys soon finds himself getting an inferior article.

No manufacturer can permanently keep up the standard of his goods if the price is persistently cut. Pretty soon he is compelled to use cheaper materials, and to cut down the wages of his workers.

The man who cuts prices puts up the sign: "This way to the junk heap!"

He admits his own failure as a salesman. He admits he has been defeated according to the Marquis of Queensbury rules of business. He admits he cannot win by fighting fair.

He brands himself as a hitter-below-the-belt.



If the business world were dominated by price-cutters, there would be no business at all.

Price-cutting, in fact, is not business any more than small-pox is health.—*Ontario Bulletin*.



Interstate Traffic in Stolen Cars

The Dyer Bill, providing a \$5,000 fine or five year imprisonment or both for taking stolen cars or trucks from one state to another has become a federal law.

That this law will materially lessen the evil of interstate traffic in stolen cars, is a foregone conclusion, provided automobile dealers and owners cooperate not only with each other but with officers of the law as well as the judges before whom the criminals are tried.

It won't take many imprisonments of offenders, to show that the public is in earnest and that stealing a motor car is as bad a crime as stealing any other article, necessary or otherwise.



BRICK NARROWLY ESCAPES \$30 MARK *in* N. Y.

FURTHER EVIDENCE of the stress upon the meagre supply of basic building materials in this market developed toward the week-end when it became known definitely that gravel bids fair to vie with common brick for leadership in the famine class this winter, according to the Dow Service Daily Building Reports of November 24.

This commodity which is an important component of concrete work is in an increasingly active market, especially since it became known that the common brick situation was in danger of reaching a run-a-way state as to price.

It seems that early in October the weather conditions operated severely against the production of gravel. At about the same time the market demand for this commodity began to become extremely acute and has become even more aggravated as the month passed. So much pressure was applied in the last few days to this commodity and upon the various producers of this material that one of the largest companies decided to reopen its largest plant and to operate it as long as it was possible to withstand weather conditions.

STAMPEDE SYMPTOMS DEVELOP

Stampede symptoms began to develop, exactly as in the case of common brick, and a scramble ensued to obtain options on available supply for the winter. In view of the uncertainty regarding the towing costs next year and the fuel situation, it was not possible for producers to figure their costs with any degree of certainty and, in consequence, all quotations are withheld on deliveries after January 1 of next year and no contracts are at present being entered into for delivery beyond that date.

Sand is in fair supply, however, with prices inclined to higher marking beyond the turn of the year especially if there is a continuation of the present pressure for supplies.

Structural steel inquiry is also showing the developing movement of the building market in no unmistakable terms. Some fabricators report that they have more business on their books than they have had since before the armistice was signed. The tonnage varies with comparatively few monumental operations. The general run is for moderate sized commercial operations as far as this market is concerned. The Bridge Builders and Structural Society shows that during the month of October 77½ per cent. of the entire capacity of the bridge and structural shops of the country was under contract. This shows a decline of one per cent. from September's total, but the business being taken in November promises to set a new pinnacle.

There is now no longer any question but that lime will be advanced after the first of the year.

LIME SHOWS ONLY 90 PER CENT. ADVANCE

This commodity has had a remarkable record during the last five years with reference to price movement upward. While other commodities have been advanced from one hundred to several hundred per cent. even within the last two years, lime shows only a 90 per cent. advance in the last five years. The cost of bags has recently advanced from \$18 a thousand to \$36 and production costs have gone up in even greater proportion in other lines. This commodity has been kept in rather rigid lines adjacent to the standards set by the one time effort to stabilize building material prices, but the heavier demand incidental to the bursting of the building flood-gates now impending has made an advance necessary. The extent of this price advance, together with that probable in the case of Portland cement, will depend largely upon the freight rate increase now generally expected.

\$18 LEVEL HELD WITH DIFFICULTY

The common brick situation is in much better control as far as run-a-way price conditions are concerned. The Association of Building Material Dealers succeeded in holding the present price to \$18 a thousand, wholesale, dock, New York, with the usual additional charges for handling, cartage and 15 per cent., altho there was brick on barges that had been sent down to this market by recalcitrant manufacturers who demanded \$20 or no sale. The dealers had the support of all but three of the Hudson river manufacturers in their efforts to keep the price at the present \$18 per thousand level on the wholesale market and at times the pressure upon the dealers and manufacturers with \$18 brick on hand was so great as to almost make the actual stampede complete. Had a single sale been made at \$20 the market would have plunged beyond control and there is little doubt that the brick market today would have been heading toward \$30 a thousand, wholesale, with no limit beyond that save a general blighting of the building movement now fairly underway.



The Bureau of Public Roads states that while expenditures during 1919 for hard-surface highways will set a new record, with total of \$138,000,000, this figure is small in comparison with computed available total for 1920 of \$633,000,000, the spending of which promises to be dependent chiefly on quantity of materials present limited railway facilities can transport.



"When we hear of a man cutting down on his advertising," says Festus J. Wade, president of the Mercantile Trust Co., of St. Louis, "we cut down on his credit."

Producing a Price Level

That we have found all the economies possible, all the improvements, all the elimination of waste, no one—least of all any business man—would be fool enough to maintain. But we must come to realize that every part of our industrial organism today is affected by every other part, and that the need today is not only for an increase in business integrity, but also for a determination to produce—produce—produce. That and productive investment, the taking of

Government bonds off the hands of the banks, the dropping of speculation and extravagance and the increase of economy, will cause the price level to adjust itself.

Let each man feel upon himself the weight of this responsibility; let us all get down to work together and aid production. We cannot turn our backs on the inevitable effects of the war. We can, by labor, readjust the inevitable laws of supply and demand. We are still paying for Victory. But after all—for such a Victory—aren't we willing to pay?



KINDS *of* ENGINEERING WORK WHICH VARIOUS FEDERAL BUREAUS DO *or* MAY DO

THE ACCOMPANYING TABLE shows the various classes of engineering work in which Government bureaus engage. The bureaus which are starred are the bureaus which it is proposed to include in the Department of Public Works. Not all of these bureaus which are indicated as doing construction work are now so engaged, but all have engaged and all may engage again. The amounts vary from \$75,000, which is the last construction expenditure of the Bureau of Chemistry, to \$200,000,000, which is the amount of Federal aid authorized yearly to be expended under the direction of the Bureau of Roads. The chiefs civil construction bureaus of the Federal Government are the Bureau of Roads, River and Harbor Improvement, Supervising Architect's Of-

fice, Reclamation Service, Alaskan Railway Commission, Mississippi River Commission, Forest Service and Public Health Service. They vary in importance practically in the order named.

Not all of these bureaus listed on this chart have permanent construction personnel. When such bureaus build they must therefore use emergency organizations and take the loss and waste which the use of emergency organizations always entails. The Public Works Department would be in a position to serve as contractor or agent for the bureaus doing this intermittent construction and would place at their disposal the services of a skilled and permanent organization.

	HYDR. CONSTRUCTION	ROAD CONSTRUCTION	BLDG. CONSTRUCTION	R. R. CONSTRUCTION	MISC. CONSTRUCTION	SURVEYING AND MAPPING	ENGINEERING RESEARCH	CHEMISTRY	COAST FLEETS	NAVIGATION, IRRIGATION AND DRAINAGE	TYPES OF CONSTRUCTION
DEPT. OF AGRICULTURE											
Soils .....	...	...	...	...	X	X	...	X	...	...	Fertilizer plant, \$75,000.
Chemistry .....	...	...	X	...	...	...	...	X	...	...	Building at Arlington, alterations, \$50,000.
Forest Service*	X	X	X	...	X	X	X	X	...	X	Roads, trails. Tel. lines, buildings.
Roads* .....	...	X	...	...	...	X	X	X	...	...	Roads, \$200,000,000 a year.
Weather Bureau .....	...	...	...	...	...	...	...	...	...	...	Local stations, observatories.
Animal Industry .....	...	...	X	...	...	...	...	...	...	...	Barns, cattle pens.
Plant Industry .....	...	...	X	...	...	...	...	...	...	...	Green houses.
DEPT. OF COMMERCE											
Fisheries	X	X	X	...	X	...	...	...	X	...	Roads, dams, hatcheries, buildings.
Standards* .....	...	X	X	...	X	...	X	X	...	...	Buildings, roads for own use—small.
Coast and Geodetic* .....	...	...	...	...	X	X	X	...	X	X	Observation towers, survey vessels.
Lighthouses	X	X	X	...	X	...	...	...	X	X	Vessels, lighthouses, walls, docks, buildings, shops.
DEPT. OF THE TREASURY											
Public Health Service	X	...	X	...	X	X	X	X	...	...	Hospitals, quarantine stations, docks, sea walls, barracks and quarters.
Supervising Architect* .....	...	...	X	...	X	...	...	...	...	...	Postoffices, custom houses, etc.
Coast Guard .....	...	...	X	...	X	...	...	...	X	...	Vessels, boats, stations, Tel. lines.
DEPT. OF WAR (Civil Constr.)											
Panama Canal	X	X	X	X	X	X	X	...	X	...	Under Secretary of War but not under War Department.
Alaskan Road Commission.....	...	X	...	...	...	X	...	...	...	...	Alaskan roads and trails.
California Debris Commission*.....	X	...	...	...	...	X	...	...	...	...	Dams.
Mississippi River Commission*	X	...	...	...	...	X	X	...	...	X	Levees.
Corps of Engineers, Civil Functions*.....	X	X	X	...	X	X	X	...	X	X	Dams, revetments, canals, dredging.
Construction Division* .....	...	X	X	X	X	X	...	...	...	X	Cantonments, storehouses, depots, utilities.
DEPT. OF THE INTERIOR											
Bureau of Mines*.....	...	...	...	...	...	X	X	X	...	...	Buildings.
Geological Survey*	X	...	...	...	...	X	X	X	...	...	Gaging stations.
Reclamation Service*	X	X	X	...	X	X	X	X	...	X	Irrigation projects.
Land Office* .....	...	...	X	...	X	X	...	...	...	...	Buildings, telephones, etc.
National Parks*	X	X	X	...	...	X	...	...	...	...	Roads, trails, dams, buildings.
Alaskan Railway Commission*	X	X	X	X	X	X	X	X	...	X	R. R.s and all things necessary thereto.

NEW PAVER STANDARDS

National Paving Brick Manufacturers' Association Submits Revised Specifications for Standard Vitrified Paving Brick to American Society for Municipal Improvements

THE NATIONAL PAVING BRICK MANUFACTURERS' ASSOCIATION has made a supplemental statement on specifications for standard vitrified paving brick which accompanied and were made a part of the proposals of the National Paving Brick Manufacturers' Association to the committee on standard specifications for brick paving and the members of the American Society for Municipal Improvements.

Four proposals were made to the above society on November 13, for the consideration of the committee for the coming year. These were on the following points:

1. Standard vitrified paving brick.
2. Sand cushion standard for bituminous fillers.
3. Cement-sand bed with cement filler.
4. Minimum depth of base.

The specification calling for a standard vitrified paving brick results from the demand upon the industry for this type of brick which made it necessary to adopt a standard size and character of product. It is the purpose of the paving brick industry to work toward a single standard as rapidly as possible, consistent with the convenience of the buyer.

The National Paving Brick Manufacturers' Association believes that there will be very few cases in which this step, which is undoubtedly the most forward step taken in the paving brick industry for many years, will not be welcomed by engineers and officials, and the public in general as a means for better brick pavements.

SPECIFICATION FOR PAVING BRICK

Section 1. *Description*: All brick shall be the Number One grade of standard vitrified paving brick. They shall be wire-cut and shall have square edges.

Section 2. *Size*: The size of standard vitrified paving brick shall be three (3) by four (4) by eight and one-half ($8\frac{1}{2}$) inches. The width shall be (....) inches and the depth (....) inches.

Section 3. *Variation in Size*: Vitrified brick shall not vary from the standard dimensions more than one-half ($\frac{1}{2}$) inch in length or more than one-eighth ($\frac{1}{8}$) inch in width and depth.

Section 4. *Quality*: Vitrified paving brick shall be evenly burned, thoroly annealed and uniform in texture. They shall be hard and tough. They shall show a uniform fracture when broken, free from marked lamination.

Section 5. *Shape*: The wearing face of the brick when laid shall be reasonably straight. Kiln marks shall not exceed one-quarter ($\frac{1}{4}$) inch.

Section 6. *Test*: Brick shall not lose of their weight more than twenty-six (26) per cent. when tested in the standard rattler, and in accordance with the standard specifications for paving brick of the American Society for Testing Materials, Serial Designation C-7-15.

Section 7. *Samples for Test*: Samples for testing shall be chosen according to the standard specifications for paving brick of the American Society for Testing Materials, Serial Designation C-7-15.

Section 8. *Brands*: The contractor shall name the brands of standard vitrified paving brick, with the prices respectively upon which he submits bids.

Section 9. *Factory Inspection*: When shipments of brick to any one project, or the combined shipments to separate projects under the jurisdiction of the engineer, are sufficient to be economical, then the brick may be inspected and tested at the place of manufacture.

The standard vitrified paving brick is a plain wire-cut square-edged brick. Its dimensions are three (3) inches by four (4) inches by eight and one-half ($8\frac{1}{2}$) inches. Approximately 36 brick are required for each square yard when laid flat (wearing surface 4 by $8\frac{1}{2}$ inches) and 48 when laid on edge (wearing surface 3 by $8\frac{1}{2}$ inches).

Standard vitrified paving brick are available already in a large portion of the paving brick market field. As soon as possible, consistent with the least derangement of engineering and trade requirements and manufacturing conditions in any locality, standard brick will be available from all members of the National Paving Brick Manufacturers' Association.

REASONS FOR STANDARD VITRIFIED PAVING BRICK

The recommendation for standard vitrified paving brick presented above, preceded by its adoption by the National Paving Brick Manufacturers' Association, was made in the interests of:

1. Economy in manufacturing cost by eliminating higher costs incident to producing many varieties of the same article.

2. Insuring the production of the highest possible percentage of Number 1 brick, uniformly and thoroly vitrified beyond all service requirements.

3. Convenience, by affording a uniform brick available from any and all manufacturers.

4. Providing a larger possible measure of economy in brick pavement construction by reducing the weight of brick per square yard approximately 25 per cent. when laid flat.

American industry had forcibly brought home to it during the war the waste and extravagance of making many varieties of the same product, each differing from another in detail only. The war taught the lesson of standardization of output.

Three years ago, the Woven Wire Fence Industry (less than 30 manufacturers) was producing a thousand different styles of fence. Less than 50 were made in common by two or more manufacturers.

Realizing the seriousness of this condition as affecting economical utilization of raw materials and other resources, standardization was worked out cooperatively, with the result that the styles were reduced to less than 40, and in the first year more than \$2,000,000 of normal operation was saved.

The paving brick industry is now producing more than 12 different styles of brick for street and highway surfaces. The capacity of the industry is approximately $3\frac{1}{4}$ million tons annually. Coal consumption amounts in round numbers to

6 million tons in a year. Even a comparatively slight relative economy applied to these figures means much in absolute value.

The need for utmost economy, as measured by the lowest possible production costs, is vital as a national service. This applies to all industry—paving brick included. Therefore, the standard brick.

INCREASING PERCENTAGE OF NO. 1's

Less than 85 per cent. of the total output of paving brick is marketed for paving purposes. Careful grading of product to meet the standards of quality for street surfaces leaves out off-grade material.

As the percentage of off-grade material is reduced by a larger proportion of Number 1's, manufacturing costs are lowered.

And the size and character of standard brick proposed to the society is the one that lends itself to uniformity in structure and vitrification with minimum waste.

While standardization of product is conceded to be essential, it naturally should not be accomplished at the cost of loss in service value. It should (and in this instance, will, it is claimed) bring added service value. The convenience to buyers of being able to secure the same size and character of produce from any manufacturer is evident on the face of it.

Reduction in weight per square yard wherever transportation and handling is involved is a readily recognized advantage in aiding more economical construction.

Experience in actual service over a period beginning nearly 40 years ago answers all questions as to the choice of proper size and character of standard selected and recommended.

SAND CUSHION WITH BITUMINOUS FILLERS

The following is also part of the proposals presented by the National Paving Brick Manufacturers' Association:

"We propose that it clearly be stated in the specifications of the society that sand is preferred as a cushion material, jointly with granulated slag and stone screenings (as representative of the same type of cushion) when bituminous fillers are used.

"This recommendation is, in effect, a positive statement that would define the usefulness of sand as a cushion material lest the fact that general usage of the sand cushion and cement grout filler has been abandoned, be construed as discriminating against sand cushion.

"It opens the door to the next logical recommendation that a specification be admitted for the cement-sand bed to accompany the use of cement filler.

"The amendments are proposed in accord with general practice now prevailing in all sections of the country.

MINIMUM DEPTH OF BASE

"The proposed reduction in minimum depth of concrete base for brick pavements is made, believing that it is the desire of the society to place its specifications at the service of engineers in all communities—large and small.

"Without question, there are streets in cities that logically require bases as deep as 6 inches when concrete is used. But there are many more conditions where 4 inches is quite sufficient for all requirements. Using 6 inches would then be an extravagance.

"Must we not think in terms of the combined subgrade and artificial foundations? May we not say that first attention should be paid to secure a thoroly well-drained and stable subsoil? With that assured, the function of the base is more to distribute loads than to support loads.

"If for no other reason, the fact that 4-inch bases are now and have been for many years in actual service without the slightest question as to adequacy, would supply all the evidence needed in support of this recommendation.

"After all, we are merely speaking of minimum depth."



N. J. CERAMIC BUILDING COMMITTEE MEETS

THE VALUE OF GETTING TOGETHER and discussing current matters of the day is becoming more and more apparent to those prominently affiliated with the New Jersey Clay Workers' Association and Eastern Section of the American Ceramic Society, and the special committee, known as the Ceramic Building Committee, recently appointed to develop plans for a new ceramic school at Rutgers College, New Brunswick, appears to be a fore-runner of bigger, better and broader activities.

This committee held its second meeting on Friday, November 21, at Trenton, the gathering having been postponed to such date from the slated time of November 14, as previously decided, thru the necessity for arranging more extended data for presentation. It was an enthusiastic and spirited meeting, so much so that those in attendance were prone to deviate from the specific course of action for the day to dwell upon pertinent topics in the industry.

The meeting was called for 1 p. m., at Hildebrecht's Restaurant, where Charles Howell Cook, president of the organization, had arranged for a private dining and conference room where full and confidential discussion might take place. Following an enjoyable luncheon, those assembled got down to business, and this business showed that the past few weeks have been decidedly profitable ones in the development of data for the proposed new school.

In opening the meeting, Abel Hansen, chairman of the

Ceramic Building Committee, called upon Professor George H. Brown for a reading of the paper he had prepared setting forth reasons and the necessity for the new building. This paper was highly illuminating and instructive; it explained the broad extent of the ceramic industry thruout the country, and the many millions invested in this field of activity, followed by a resumé of the prominence of the clay working industry in the state of New Jersey.

Mention was made of the great benefits brought about thru the investigations and developments in ceramic work during the war, and how American clays have supplanted those formerly imported from Germany. It was brought out that the industry as a whole has a wonderful future before it, but that to make this possible in every meaning of the term, technically trained men were necessary, and to produce technically trained men, schools and proper facilities in those schools are vitally essential.

It was set forth that there are four ceramic schools in the country at the present time, in Ohio, Illinois, New Jersey and at Alfred, New York, and that these are supported by state funds. The local facilities at Rutgers College are wanting in many particulars—first a new building, and then equipment are needed.

The paper was received with pronounced approval by those assembled, and with the meeting thrown open for discussion, various comments and suggestions were made to enhance

the data for presentation to the members of the legislature, to whom a request for an appropriation, aggregating about \$100,000 will be made.

Professor Brown explained that the paper had been read by Senator Thomas Brown from the Raritan River section, who is assisting the committee in the matter, and that he, in turn, had made a few recommendations for revision and extension in order that the presentation would bring about the desired sympathy with the cause on the part of the legislature.

Mr. Cook moved that the paper be rearranged to suit the different suggestions, and then printed so as to be ready, if possible, at the annual meeting of the organization to be held at New Brunswick on December 18. This was approved, and was followed by a suggestion of Mr. Hansen that the special committee should hold another session before the annual gathering in order that the final draft of the paper could be carefully studied and approved. This motion was also seconded and passed, fixing the date of the next meeting of the Ceramic Building Committee at Rutgers College on Friday, December 12.

Charles A. Bloomfield, Metuchen, made a recommendation in his fine affable manner that the meeting take place at "Hotel De Bloom" by which term his elegant homestead is commonly referred to by his wide circle of acquaintances, but owing to the longer distance and the brief time allotted to the meeting, it was deemed that this would be impossible.

On further recommendation of Professor Brown that this special meeting include the entire Executive Committee of the association, the forthcoming gathering assumed a broader aspect, and it is proposed to consider at this time different features which are to be presented at the annual meeting a week later.

PROGRAM FOR ANNUAL MEETING

At this juncture, Professor Brown took occasion to remark that he was arranging a comprehensive program for the annual affair, embodying both technical and practical discussions, with subjects to include such matters as: Fuel, Kiln Firing, Glass, Vocational Training, Terra Cotta, and Clay Washing.

August Staudt, president, the Perth Amboy Tile Works, pointed out that the matter of fuel was an all-important one at the present time, but that to get too technical in the line of "B. t. u.'s" left the listener in as much doubt as before. Consequently, any paper on this topic should be thoroly practical. Mr. Cook was close on the heels of Mr. Staudt to urge practicability in the different papers in a number of instances—in just the right mixture, and was seconded in his remarks by Franklin Wolff of the Monument Pottery Co.

Mr. Wolff also urged the presentation of a paper covering the preparation of ceramic plants against the foreign competition which is now on the way. He said that this was a highly important subject, and that ways and means must be devised to offset the trade difficulties which are bound to ensue.

In taking this stand, Mr. Wolff encountered one of Mr. Cook's prominent contentions, directly along the same line, and he responded by giving additional views on his knowledge of what was going on today in Germany and Japan. "Something must be done," he said, "and it is up to some of us to point the way."

MUSEUM OF EXHIBITS

Mr. Cook also brought up a subject which is close to his heart, and that covering the establishment of a representative exhibit of ceramic specimens at Trenton. He requested Professor Brown to issue a special notice urging members

to bring pieces for such an exhibit at the annual meeting, in order that the movement might take definite action. Moreover, he pointed out that such an exhibit of the right character would be distinctly valuable for inspection by members of the legislature when the bill for the appropriation for the proposed new school was up for discussion and consideration, and might work to influence a favorable decision.

Mr. Bloomfield seconded this suggestion warmly. He said that the legislature must be educated, and that there was no better way than thru the eye, in letting them see just what was going on in the matter of ceramic production in the state—and also, what had been going on for years.

The strong determination on the part of the Ceramic Building Committee to leave nothing undone in connection with the presentation of arguments for the new school, brings great and increasing interest to the matter. It is a move for the advancement of the ceramic industry in the state—and it is growing by leaps and bounds. The possibility of receiving the desired appropriation is taking on the aspects of grim certainty; the committee is out to really do things.

ATTENDANCE

Those in attendance at the special meeting were: Charles Howell Cook, president, the Cook Pottery Co., Trenton; Abel Hansen, head of the Fords Porcelain Works, Perth Amboy; Charles A. Bloomfield, head of the Bloomfield Clay Co., Metuchen; Professor George H. Brown, Director, Department of Ceramics, Rutgers College, New Brunswick; August Staudt, president, Perth Amboy Tile Works, Perth Amboy; Franklin Wolff, treasurer, the Monument Pottery Co., Trenton; Charles T. H. Phillips, president, Sneyd Enameled Brick Co., Trenton; and LeRoy W. Allison, eastern editorial representative, *Brick and Clay Record*.



Former Chicago Brick Manufacturer Is Dead

George Christian Prussing, retired Chicago brick manufacturer and builder, died recently at his home, Chicago, at the age of 73 years. He came to Chicago with his parents, who emigrated from Germany when he was twelve years old. He attended public schools in Chicago and later entered a business college. In 1868 he entered the building field as a contractor and brick manufacturer. He was president of the Illinois Brick Co. from 1904 to 1906, vice president and director of the Purington Paving Brick Co., Galesburg, Ill., and a director of the La Salle Portland Cement Co.

He retired from active business several years ago, but remained a director in the various companies until his holdings were taken over by the government under the alien property act.

Mr. Prussing was stricken by an attack of acute dilation of the heart, from which he failed to rally. He was a life member of the Chicago Athletic Association and of the Builders' Club.



Winter Activity in Home Building

More than 72 per cent. of the inquiries for home building information and house plans come from prospective builders in the winter and spring months, particularly the winter months, according to a recent analysis made by the Southern Pine Association. Of 135,089 requests for building helps, 97,433 came between November 1 and May 31, and of this 97,433—17,070 came in November and 17,921 in February. The season of greatest actual building activity is, of course, during the open warm weather months, but the planning and deciding are done in the winter and early spring.

HOW *a* CERAMIC KILN MAY *be* INSULATED?

A Paper Presented at the Meeting of the New Jersey Clay Workers Association, at Trenton, N. J., June 24, 1919

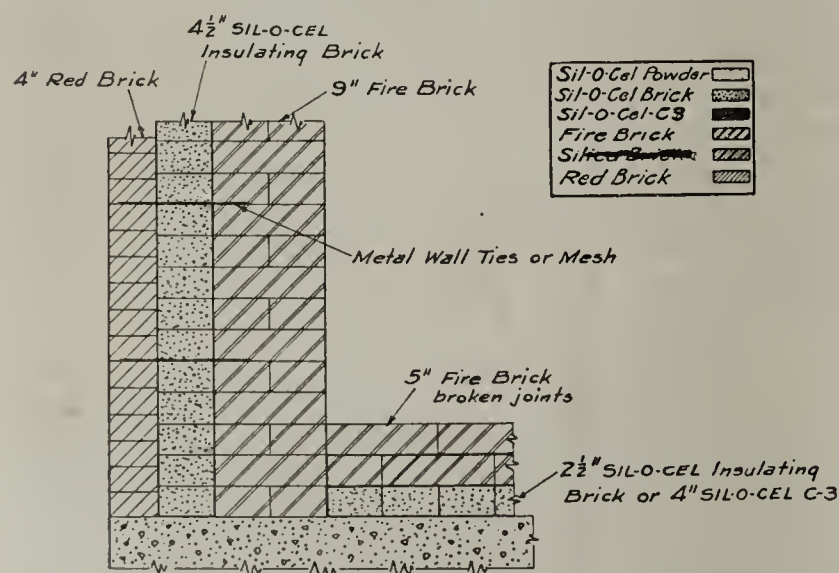
By P. A. Boeck

Chemical Engineer, Celite Products Co., New York

EDITOR'S NOTE: "Brick and Clay Record" is absolutely averse to printing anything which savors of a "puff" or paid write-up and is publishing this article because it contains some information of very high value to the ceramic industry. It was found impossible to cut out the trade names contained in the manuscript without making certain parts of it vague and meaningless, hence, the article is printed in the same form as presented in the meeting of the New Jersey Clayworkers' Association.

THE PROPER INSULATION of kilns for burning ceramic ware is a subject of primary importance—more so, possibly, than many of those in this industry have appreciated. Waste heat means waste dollars, and in these days of excessive labor and operating costs, and utmost necessity for conservation, every effort should be made to reduce general overhead expense. The overhead factor of production is always with us, and for desired profits there must be consistent manufacturing costs. The day of wastefulness is over—the times demand it.

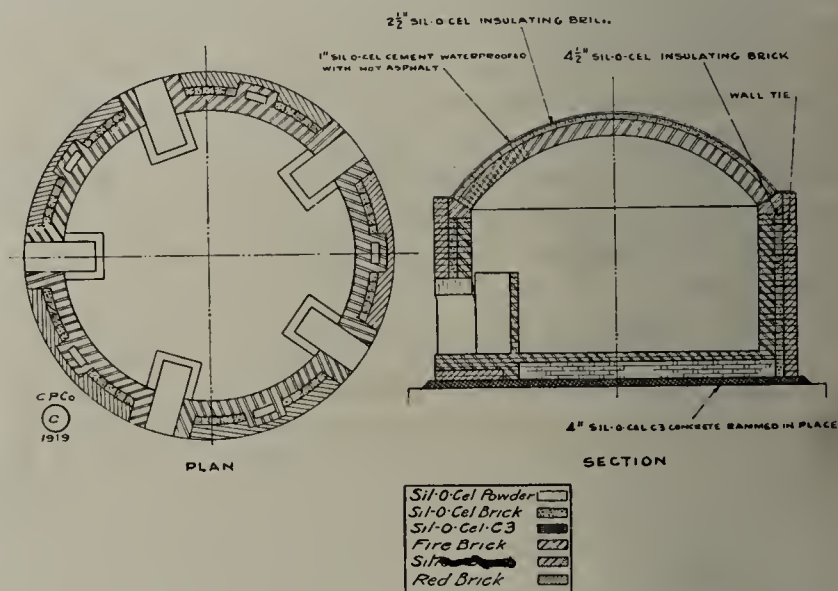
Adequate kiln insulation not only works toward economy, but brings about decided advantages in many other ways. In the ceramic industry in time past there has been a great lack of attention given to the question of heat conservation; the prevailing attitude as regards insulation has been, in



Section View of Kiln Showing How Base May Be Insulated Against Radiation Losses.

general, that of "adhering to old methods," and rather in decided contrast to conditions as found in other important lines of industrial activity.

Considering the iron and steel industry, gas, boiler and power plants, petroleum refining, enameling and japanning operations, etc., we find an evident desire and intent to get the greatest possible effect from the heat generated, with no small appreciation for the value of giving careful thought



Plan and Section of a Round Down-Draft Kiln Which Has Been Insulated as Shown

and study to each thermal operation. Thus, a comparison of the progress made in these fields with the present status of insulation conditions in the ceramic industry is rather startling.

At the same time, there seem to be reasons for this apparent inactivity in ceramic kiln insulation. In the first place, the industry has grown by leaps and bounds, the advances made during the war period are nothing short of astounding, and they speak well for the enterprise and energy of the leaders in this field. Again, up to within a few years ago, there were really no suitable materials available for permanent and effective kiln insulation. Moreover, popular knowledge of heat characteristics have not been available—that is, information regarding the mechanics and extent of kiln losses, with practical methods for their prevention not being in the hands of kiln men. Serious losses are occurring constantly in ceramic kiln operation; the development of the heat balance sheet, indicating an extensive waste of heat, has brought this fact forcibly to the attention of kiln designers—a waste that for the most part cannot only be prevented, but actually turned to good account.

A number of the brick, tile, pottery and other ceramic plants in the country have recently acknowledged the advantages attending insulation construction. These plants have sought correct heat distribution and the elimination of heat

losses in kiln operation, not only permitting operation on a reduced amount of fuel, but what is equally important, with a noticeable reduction of losses in ware manufactured.

A quotation from a paper read before the American Ceramic Society, (P. A. Boeck, "Heat Insulation Applied to Kilns," February, 1918 printed in *Brick and Clay Record*, June 18, 1918) is of interest in this connection:

"Contrary to the practice in many of the industries in which the importance of insulation has been recognized and its principles effectively applied, the ceramic industry burns its most costly products, that is, products as a rule on which the larger proportion of the labor required has already been expended, so that kiln losses not only include the materials used which are largely a total loss, but also all the labor, direct and indirect, expense of manufacture, to say nothing of the effort required to prepare them for the burning operation. It is quite evident, therefore, that any effort made to reduce the number of rejected pieces by improving the kiln conditions will have a very important bearing on the ultimate reduction in the cost of the product."

PROPAGATION OF HEAT

Heat, as is generally known, is a form of energy consisting of molecular vibration of a periodic character, the rate



The White Colored Ring in the Above Kiln Wall Represents Insulation Brick.

of flow or propagation of which may be increased or decreased, reflected or dispersed within wide limits, by suitable mechanical means. It is transmitted in three ways,—by conduction, convection, and radiation, the definitions of which we believe are too well known to need repetition here. Of these three, considered in connection with kiln construction, conduction plays the most important part, for by increasing the thermal resistance or decreasing the internal conductivity of a kiln wall, the temperature of the outer surface of the wall can be greatly reduced and consequently radiation from it largely diminished or entirely avoided.

HEAT LOSSES

The amount of heat lost due to radiation from the outer walls of the kiln is difficult to estimate, and must, of necessity, be the subject of direct investigation. It may range from 10 per cent. in the case of a well-insulated kiln, to as high as 60 per cent. of the fuel fired, increasing with the exterior surface of the walls. A large proportion of the loss is usually found at the top of the kiln, particularly in the crown due to high temperature and thin crown construction.

An article by Carl B. Harrop (2) "The Heat Balance of a Continuous Tunnel Kiln," indicates a loss of heat by radiation of 45 per cent. of the total fuel fired. Again, A. V. Bleininger (3) has pointed out that in three commercial kilns about 25 per cent. of the fuel fired was lost thru the same reason, of which 60 to 75 per cent. is preventable by insula-

tion construction designed to prevent this loss. Taking these figures, A. F. Greaves-Walker (4) calculates the actual loss in burning brick under these conditions as follows: Coal



The View Here Illustrated Shows the Men Placing the Plating Upon the Crown

is taken at two dollars a ton, a figure far too low, of course, for this day, with allowance of 1,200 pounds of coal per thousand brick in a 30-foot kiln, having a total capacity of 65,000 brick; the loss in coal fired by radiation thru the walls and crown at every burn amounts to \$19.50, and of which considerably more than half can be saved by insulation. The claims of high efficiency of almost all of the tunnel kiln types are as invariably based upon thorough insulation. This produces a more uniform distribution of heat thruout the kiln, with the consequent elimination of over and underburned pieces, more complete temperature control, protection of the outer brick-work from violent temperature change and consequent cracking with its resultant air leakage, possibility of using thinner wall without excessive radiation losses and eliminating the necessity of over-heating the hotter portions of the kiln in the endeavor to bring the cooler parts up to temperature.

KILN WALL CONSTRUCTION

In considering kiln wall construction, Greaves-Walker has summed up in three important points (5).



This Picture Shows Part of the Kiln Crown Covered With Plating and Part With the Insulation Brick in Place

- (1) A wall of sufficient thickness to withstand the strain.

(2)—C. B. Harrop; Discussion, American Ceramic Society—1917.

(3)—A. V. Bleininger—Bureau of Mines Report.

(4)—A. F. Greaves-Walker, "Construction and Design of Down-Draft Kilns," *Brick and Clay Record*, September 7 and 21, 1915.

(5)—A. F. Greaves-Walker, Loc. Cit.

(2) A sufficient thickness to prevent excessive heat loss.

(3) A wall sufficiently thin to conform to good design.

To produce an effective high temperature wall two separate and distinct factors must be taken into consideration.

The first is to provide a refractory material having the ability to resist the action of high temperatures, sufficient mechanical strength and possibly the property of resisting corrosive slags, gases, etc., without spalling or being eroded.

The second is to prevent excessive loss of heat by conduction from the interior of the wall to the outside, where it is lost by either radiation or conduction. A good refractory material is usually not an insulator, and therefore, it becomes necessary to use, in conjunction, other material with a much lower heat conducting capacity.

In thick heavy walls the radiation loss is diminished, but greater cost and repair charges will be found, and the heat stored up in the walls will be lost. On the other hand, with thin wall construction the concentration of heat is averted, but there is an excessive wall radiation. Again referring to Greaves-Walker, thin straight walls are to be desired if they can be properly insulated.

Most high grade refractories being highly burned and of a dense nature are good conductors of heat, and permit the passage of an abnormal amount of heat thru the walls of high temperature equipment. It is therefore of importance, in order to assure reasonable thermal efficiency and low fuel consumption, to introduce within the walls a material which will break up or disperse the flow of heat in such a way as to restrict its passage and thereby reduce the outside temperature of the wall.

PROPERTIES OF GOOD INSULATORS

Kiln insulation makes rather exceptional demands on the insulating material used, for with one or more of the following characteristics lacking, the resultant service cannot be of high efficiency nor provide durable, rugged construction. The ideal insulating material should possess the following properties:

Sufficient mechanical strength to resist wall strains, due to expansion and contraction.

Extremely high heat insulating value.

Of a nature not to be decomposed or altered by high temperatures.

Sufficiently refractory so as not to fuse or shrink when subjected to high heat, having approximately the same expansion as the brick-work.

Light in weight.

Unaffected by moisture.

Of convenient form to be readily applied by unskilled labor.

Low in cost.

While these demands are seemingly severe, there are commercial products on the market which practically fulfill all of these requirements.

INSULATING MATERIAL

It will be of interest in indicating the development in kiln insulation within the past few years, to consider the design and construction which has been successfully used. In this discussion typical examples will be shown in which Sil-O-Cel insulation has been used, as this is the construction with which the writer is most familiar. This material is a western product, possessing unusual insulating properties, light in weight, and at the same time having the necessary strength and refractory character to fulfill the conditions required in this work.

This product has for a number of years been used in the insulation of high temperature equipment in the iron and steel industry, manufacture of portland cement, gas, etc.,

where the temperatures at times considerably exceed those ordinarily encountered in ceramic kiln practice, and in fact it is now looked upon as a standard structural material by engineers in these fields, so that in presenting this matter to the ceramic industry, we know that it is fully capable of meeting the demands of this industry. In fact, the work which has already been done in kiln insulation conclusively indicates that it can be used with entire safety and benefit.

Sil-O-Cel insulating brick are produced from Celite,—a highly siliceous material which occurs in an unusually pure state, being entirely free from clay, sand or fluxes from which they are sawed. It is also produced in the form of a powder, granular and plastic material. In its natural form, this material weighs from 25 to 30 pounds per cubic foot, when ground, 8 pounds per cubic foot, loosely packed. When installed in high temperature equipment, the powdered material should be tamped to a density of about 15 pounds per cubic foot, at which point it assumes its maximum insulating value, and at which point it will not settle or shrink under the influence of vibration or heat.

The Bureau of Standards has reported this material to have a melting point of 2930 deg. Fahr. (1610 deg. C.)

The internal conductivity of Sil-O-Cel varies between 0.5 and 0.8 B. t. u. per square foot per hour per degree Fahr. difference in temperature between ordinary temperatures and 1800 deg. Fahr., being about one-tenth that of high grade fire brick between these temperatures. The insulating brick weigh about 1¾ pounds each, and have a crushing strength of over 400 pounds per square inch.

For temperatures in excess of 1800 to 2000 deg. Fahr., however, it is desirable to use an insulating brick which has been kiln-burned to give it a greater permanency of volume. These brick, known as Sil-O-Cel C-22 have a crushing strength of about 1200 pounds per square inch, but do not possess quite the high insulating value of the regular Sil-O-Cel brick.

INSULATION OF KILN CROWNS

Crowns can best be insulated with either a 2½ or 4½ inch course of Sil-O-Cel insulating brick laid in Sil-O-Cel mortar over the fire brick, but not bonded to the crown brick-work. When the crowns are protected, the joints should be pointed up with Sil-O-Cel mortar, and after the first burn when crown settling has taken place, Sil-O-Cel powder brushed over the brick. When kiln crowns are unprotected, the insulating brick should be covered with one-inch coating of Sil-O-Cel cement, and properly waterproofed, preferably with hot asphalt or a course of brick. An alternate construction for the crowns, where this is desired, is to apply a moist layer of Sil-O-Cel insulating powder from 4 to 6 inches thick instead of the brick. In this case Sil-O-Cel cement should be applied over the powder about one inch thick after the second or third burn and waterproofed with hot asphalt. The former construction, however, is recommended to be more satisfactory.

SIDE WALLS

The side walls should contain a 4½ inch thickness of Sil-O-Cel insulating brick laid directly behind the 9-inch course of fire brick between them and the exterior clay brick. It is a well-known fact that there are as many methods of laying up brick in walls as there are bricklayers, and without entering into a controversy as to the virtues of the various methods advocated, we will indicate several of the general types of construction where insulating brick are used, which have been in successful operation for a number of years. The most general, and that finding greatest favor in high temperature wall construction, is to place the insulating brick back of at least nine-inches of fire brick

bonded to it, as well as to the outer course of second-grade fire brick or shale brick as desired by means of one-fourth inch wire mesh laid every fifth or sixth course horizontally. Another method of bonding which has been used successfully is to apply ordinary metal wall ties in the same manner.

Bonding brick 13½ inches long used as occasional headers are sometimes used in certain types of work. These, however, do not find as much favor in kiln construction as in other classes of work, owing to the wide temperature change thru which the walls go, and periodic temperature change.

BASES

Considerable heat loss occurs thru the base of kilns, the heat passing thru base and foundation and is lost. This can be reduced to a minimum by installing a thickness of 4 to 6 inches of Sil-O-Cel C3 concrete directly under the fire brick bottom, or building the foundation of this material.

Now as to efficiency of this type of construction—it has been found to reduce the radiation loss from 50 to 75 per cent., giving exceptional improvement in temperature distribution and control. In operating costs this work shows that in the operation of a 30-foot kiln the fuel saved, taking coal at the low figure of two dollars per ton, aggregates \$230 a year, with the cost of insulation approximately one-third of this sum. In other words, the insulation paid for itself directly within a few months' operation, independent of the reduction made in the kiln losses.

The construction of a down-draft kiln erected a few months ago, and shown in the accompanying illustration, will be of interest. The structure is insulated thruout—at the base, walls and crown. The base contains 4 inches of Sil-O-Cel C3 concrete composed of a 1 to 4 mixture of Portland cement and Sil-O-Cel C3, respectively, tamped in place. In the walls, a 4½-inch thickness of Sil-O-Cel calcined brick is installed between 9 inches of fire brick and 12 inches of red brick. Over the crown a 2½-inch thickness of Sil-O-Cel insulating brick is laid, covered with two one-half-inch coats of Sil-O-Cel cement composed of one part Sil-O-Cel powder to three parts of Portland cement by volume, and waterproofed with a coat of hot asphalt after the second burn of the kiln.

The operation and efficiency of this kiln can be told in few words. The outside temperature was 220 deg. Fahr. which increased to 254 deg. Fahr. when the fire was turned off. The highest inside temperature was 2200 deg. Fahr., and a very low fuel consumption and a uniform interior kiln temperature were obtained.



Exports and Imports of Clay Products

Port officials at New York have issued a report showing the extent of exports and imports at this harbor during the month of September. The figures are interesting in each particular, indicating the call now being made on this country for ceramic products, and in the second case the influx of finished commodities, particularly in the line of chinaware from foreign lands. The statistics are as follows:

EXPORTS

CHINAWARE: The total exports of chinaware aggregated \$20,477. The principal shipments were as follows: Australia, \$1,152; Uruguay, \$2,500; Haiti, \$1,143; Cuba, \$2,675; Columbia, \$1,555; China \$950; France \$757; Guatemala, \$1,201; Brazil, \$861; and Panama, \$1,193.

EARTHENWARE: The total exports were \$21,797, with

principal shipments as follows: Cuba, \$2,967; Haiti, \$1,725; San Domingo, \$1,188; China, \$879; Panama, \$2,592; Nicaragua, \$2,076; Guatamala, \$2,731; Ecuador, \$493; and Venezuela, \$773.

TILE: The aggregate exports for the month were \$18,885. The principal points of delivery were: Peru, \$3,156; Venezuela, \$2,712; Ecuador, \$1,256; Argentina, \$1,863; Mexico, \$3,009; Cuba, \$2,359; Panama, \$930; and Spain, \$1,900.

CLOSET BOWLS: The aggregate exports reached \$13,669, with primary shipments as follows: Cuba, \$2,616; Venezuela, \$3,218; Norway, \$700; Guatamala, \$502; Panama, \$4,581 Columbia, \$899; and Chile, \$210.

FIRE BRICK: The exports from New York for the month noted aggregated \$26,958, and this distribution was as follows, the notation in brackets representing the quantity in thousands: Cuba, \$8,103 (78); Haiti, \$2,302 (8); San Domingo, \$5,584 (81); Brazil, \$1,223 (38); Chile, \$3,520 (40); Panama, \$600 (10); Trinidad, \$120 (1); Peru, \$4,410 (57); Venezuela, \$225 (3); Bermuda, \$43 (1); Columbia, \$53 (1); Ecuador, \$225 (2); Dutch Guiana, \$540 (5).

BUILDING BRICK: The total exports reached \$9,494 in valuation, with distribution as follows, the notation in brackets representing the quantity in thousands: Brazil, \$1,494 (28); and San Domingo, \$8,000 (256).

IMPORTS

CHINAWARE, PLAIN: The imports of this material for the month at New York totaled \$19,834 in valuation, with principal deliveries from the following countries: Germany, \$16,159; Austria, \$2,618; France, \$232; England, \$176; Japan, \$486; and China, \$89.

CHINAWARE, DECORATED: The total imports aggregated \$272,485, received from the following countries: Germany, \$152,851; England, \$24,564; China, \$6,493; Hongkong, \$5,689; Japan, \$67,246; France, \$12,398; Austria, \$2,917; Italy, \$157; The Netherlands, \$84; Denmark, \$54; and Belgium, \$32.

EARTHENWARE, PLAIN: The total imports had a valuation of \$3,844, with receipts as follows: England, \$3,334; Japan, \$371; France, \$83; and Germany, \$56.

EARTHENWARE, DECORATED: The aggregate imports reached a valuation of \$149,486, with the various countries as follows: England, \$133,603; Japan, \$9,255; Germany, \$3,234; France, \$1,706; Hongkong, \$161; China, \$110; Italy, \$249; Spain, \$173; The Netherlands, \$944; Sweden, \$10; and Demark, \$3.

ALL OTHER EARTHENWARE: The valuation of total imports at the Port were \$8,570, with shipments received from the following countries: England, \$5,845; Scotland, \$1,504; France, \$708; Japan, \$455; Cuba, \$37; and China, \$21.

The only imports of clay at the Port of New York were from England. The china clay representing 7,379 tons, had a valuation of \$97,278. All other clay totaling 2,674 tons, had a valuation of \$25,136.



Soon To Make Fused Silica Ware

The General Ceramics Co., Keasbey, N. J., specializing in the production of chemical stoneware, reports a considerable increase in the volume of orders, and expects to be operating at any early date at full capacity. This plant is producing an exceptional line of specialties, including both large and small products. Contracts are taken covering the complete equipment of chemical plants. The company has been building an addition for the manufacture of fused silica ware, and this extension will be in operation at an early date. Fred A. Whitaker is superintendent.

INDUSTRIAL DEMOCRACY— EXTRAORDINARY RESULTS ACHIEVED

Strike Averted—Employees Go on Record Publicly to Stick on Job—Pledge Loyalty to Employers, Obtaining Same Advantage Thru Industrial Democracy Without Strike or Friction

By B. C. Forbes

Editor of "Forbes Magazine"

THE EYES OF THE EMPLOYERS, and even the public, are being opened by the extraordinary results that can and are achieved when a company extends to its workers a reasonable measure of Industrial Democracy and treats with them in man to man fashion, on a friendly cooperative basis.

Take this incident: The Passaic Metal Works are run under the Leitch system of Industrial Democracy. Recently there were persistent reports afloat there that plans were being engineered to call a universal strike to enforce the introduction of a forty-four hour week. President I. W. England, of the Passaic Metal Ware Co., after referring to these reports, states:

"Our machinists voluntarily and without suggestion from anyone have met and gone on record publicly, and, furthermore, pledged themselves to refrain from joining any such movement and to stick on the job with thoro satisfaction under the existing conditions, for, as they have expressed it, they know that if the forty-four hour schedule becomes general and on a basis which does not place our organization at a disadvantage, they will obtain, the same advantage under Industrial Democracy, without strike or friction of any kind, as a simple matter of justice."

At another plant operating under the Leitch Industrial Democracy plan, the House of Representatives—consisting solely of the rank and file of employees—recently issued a statement, at a time when a strike was on at other plants in their line, that the employees of this company were entirely satisfied with their working conditions and affirmed their intention of remaining absolutely loyal to their employers, since there had never been the slightest disposition to deny them anything within reason.

ESTABLISHES CORDIAL UNDERSTANDING

These are but typical illustrations of how Industrial Democracy brings about an attitude of ardent loyalty and enthusiasm among workers operating under it. It succeeds in establishing the most cordial understanding between management and men. Indeed, democracy in industry has worked much more smoothly than democracy is operating today at Washington. At the Capitol there is almost constant wrangling in both Senate and House and frequent clashes between these two bodies. Under Industrial Democracy there is, of course, plenty of healthy discussion and debate but rarely any fiery friction between the Senate, consisting of

foremen, superintendents, etc., and the House of Representatives, composed of the ordinary workers.

As the results obtained under Industrial Democracy become more widely known, interest in the whole subject becomes keener and keener.

In order to facilitate the successful installation of Industrial Democracy in plants thruout the country, Mr. Leitch has arranged to give a course of training to responsible representatives from different companies, and the demand for this instruction is overwhelming. One of the very largest manufacturing companies in the United States is the latest convert to Industrial Democracy, and other enterprises of great magnitude are now actively negotiating with a view to introducing the plan as soon as proper arrangements for installing it can be made.

The newspapers lately have recorded eye-opening incidents illustrative of the wonderful change effected upon the minds of workers when granted a voice in the conduct of their plants. The Midvale Steel Ordnance Co. has a system for cooperating with its men, and the newspapers not long ago gave great prominence to a resolution adopted by the Midvale workers declaring that, "The persistent and unceasing demand of workmen employed in all classes and kinds of industries for a shorter day's work and an increased wage in order to meet the present high cost of living is uneconomic and unwise and should not be encouraged."

BAKER ADVOCATES COOPERATION

Can you imagine any set of workers operating under Industrial Autocracy voluntarily coming forward with such a declaration? Yet this is only a typical instance of the attitude produced wherever workers are given a voice in management and otherwise treated in straightforward, democratic fashion.

Altho much confusion was created concerning what has developed at the Rock Island Arsenal—thru the unjustified efforts of advocates of the "Plumb Plan" to create the impression that the principles advocated by railway workers had been adopted there—nevertheless what has actually happened at the arsenal is extremely illuminating. It affords additional testimony of the transformation produced among workers when permitted to have a voice in the running of their plant and taken into the confidence of the management in a cooperative way. The Rock Island Arsenal was not turned over to the workers, as claimed by

"Plumb Plan" enthusiasts; what was done is described by Secretary of War Baker in these words:

"The War Department has encouraged the formation of committees of its employes in the arsenals, which committees consult freely with the men and act in an advisory capacity to the management on questions of shop conditions, production and wages. By this means hearty cooperation has been secured, and complete sympathy between the management and the employes has resulted.

"The authority of the management, however, is wholly undiminished by the advisory relation of the committee—the management of the plant is undisturbed—the Government operates them, and the authority of the commanding officer is as complete as it has always been.

"The whole purpose of the steps which have been taken is to bring about understanding and good feeling, but not in any sense to part with either the responsibility or the authority of the Government in the management of these industrial enterprises."

Now, tho apparently the arsenal employes were not granted quite as much say in the running of things as is extended to workers under the Leitch system of Industrial Democracy, yet even this modest measure of cooperation had remarkable effect upon the men, as will be gathered from the following letter addressed to Secretary Baker by the employes' representatives:

"Primarily the employes feel that yourself and General C. C. Williams are interesting yourselves in them in a vital significant way, that is, concerning the stability of their positions, rather than in paternalistic ways such as have been tried with questionable results in so many instances during the past. They realize that their status is now in the process of change. They no longer feel like mere employes, simply bent on holding down a job quite apart from their conception of life, for no other purpose than the earning of wages, the only crude means available to them for securing the necessities and perhaps a little of the better things of life. They are beginning to see that they are on their way toward becoming partners in a large enterprise.

"It has been very gratifying to us to note, many times, that the necessity on the part of the men for economical production is well understood. For instance, at Watervliet Arsenal recently during the noonday rallies which were being held, the appeals of the speakers, who were from the workers, were for efficiency. At Watertown some of the men stated that in the interest of the workers their abilities were limited when it came to functioning on employes' committees, handling grievances, etc., for, they said that that was not their forte. They did not feel able to confront the management in sufficiently forceful ways while prosecuting cases of such a nature.

"But, they said, they clearly saw their opportunity in the chances which now existed for functioning on production committees. Their abilities, they felt, lay in that direction and they most enthusiastically welcome the circumstances which promise them these new opportunities for self expression. At Frankford and Rock Island instances have occurred where the employes have 'gotten after' individuals who have not been doing as well as they might.

INSTANCE OF SPLENDID SPIRIT

"A striking instance of the splendid spirit of cooperation which automatically develops when the employes are given an incentive and a chance for self-expression recently occurred at the Frankford Arsenal. The Post Office Department was in the market for a large order of dials for registered mail locks, for which they had previously paid \$45 per thousand. Frankford Arsenal submitted an estimate of \$38 per thousand, so when the committee on esti-

mates informed the employes they had figured very closely in order that this work could be secured for them the employes were enabled to demonstrate their appreciation of this new condition and volunteered to work during lunch hour if necessary to live up to their committee's judgment as to direct labor costs.

"There is attached hereto a statement concerning the way things work when the employes are enabled to participate in the management of the shop. This is but a mere indication of what really can be made possible in a large way thruout all the arsenals. In short, a spontaneous efficiency is in the making, which, we sincerely feel, will before long produce records of production that will make the most ardent Taylor system advocate envious. And this will all be because the employes want to produce, not because they are obliged to do so.

"We find as a whole that the attitude of the local management is conducive toward the development of this new spirit. Where misunderstandings have existed or still exist we hope to help straighten them out by education and the demonstration of our unalloyed sincerity and loyalty to all the interests at stake.

"We are and will for a long time suffer from the heritage of the conditions we are now on the way toward eliminating. It is our conviction, more now than ever before, that before long the opportunity will be ripe for us to secure outside talent in the form of competent management engineers and production experts to advise us as workers what we can do to help improve things, what the management can do and, finally, what we and the management can do jointly.

"We are not unaware of our own limitations in this respect, and, when the time comes, we hope sincerely that you and the Chief of Ordnance will gladly extend to us the opportunity to have our technical experts cooperate with the arsenal management and their experts for the purpose of doing everything possible to warrant the fullest utilization of the arsenal as centers of production."

To this letter Secretary Baker replied:

"The Government needs not only the hands of its employes but their heads and hearts, and the spirit of cooperation and loyal enthusiasm illustrated by the instances which you cite to me are not only evidence of a present sound situation but promising of constant future improvement."

It is significant of the general trend toward bringing about closer cooperation between executives and workmen that the Senate's bill for restoring the country's railroads to their owners provides that all questions regarding wages be brought before a committee consisting of four representatives of the company and four representatives of the employes. It is noteworthy, too, that the proposed measure—it is called the Cummins Bill, because evolved by the subcommittee of the Interstate Commerce Committee of which Senator Cummins, of Iowa, is chairman—also stipulates that two employes' representatives be given seats on each board of directors.

There is, moreover, another provision in the bill not unlike another feature of Industrial Democracy; under Industrial Democracy wage dividends are paid based upon savings effected by each department, and the Cummins Bill contains the provision that after payment of "a fair return upon the value" of the railroad property, one-half of any excess profits be applied, first, to improving the conditions of work of the railroad men, and after that, that there be a direct share by the men in the excess returns (the other half of the excess profits to be placed in a fund for the use of the railroad board in purchasing equipment or lending it to individual roads for that purpose).

I believe that there is no more important problem con-

fronting America today than the establishment of amicable, mutually profitable relations between so-called capital and labor, and my conviction is that the solution must be sought along lines tending to bring about a greater measure of democracy in industry.



Uses Vehicle Cards to Push Brick

The Fort Wayne (Ind.) Brick Co. is right on its toes pushing common brick and urging the construction of buildings with solid brick. The accompanying cut shows two cards, placed one above the other, such as are used by this concern in preaching the sermon of brick. These cards represent only two of the several different cards,

BUILD WITH SOLID BRICK

"THE WALL OF ECONOMY"

The most durable and not any more expensive than other material. We can convince you of these facts

Fort Wayne Brick Company

Fort Wayne, Indiana



Phone 1894

BUILD WITH SOLID BRICK

"THE WALL OF ECONOMY"

The everlasting, fire-resistive material. As good in fifty years as when first built.

Fort Wayne Brick Company

Fort Wayne, Indiana



Phone 1894

Two Examples of Cards Used by the Fort Wayne (Ind.) Brick Co. and Which Are Tacked on All of the Company's Wagons.

all having different messages on them, which are tacked upon the wagons and motor trucks used to haul brick. It will be noticed that the association trade mark of the Common Brick Manufacturers' Association of America is also stamped upon the cards.



October Building Operations

Building contracts awarded during the month of October, 1919, in the territory north of the Ohio and east of the Missouri rivers, amounted to \$311,382,000, which was greater than the figure for any previous month of this year, according to the F. W. Dodge Co. review of building activity. This was an increase of \$76,801,000, or 33 per cent. over the total for the month of September, the September total having been somewhat less than that for August.

Of the total amount for October, 34 per cent., or \$105,663,000, was for residential buildings; 25 per cent., or \$78,249,000 was for industrial plants; and 15 per cent., or \$45,939,000 was for business buildings. Public works and utilities amounted to \$42,334,000.

The October figures brought the total for contract awards for the first ten months of 1919 up to \$2,111,452,000, which is greater than the total for any entire year previous to 1919. In fact, these figures indicate an actual volume somewhat greater than the actual average annual volume for the five years previous to 1919.

Cities for Sale

Out of a war which has left France and Belgium in desolation and ruins and the rest of Europe but little better off, Uncle Sam has emerged to the good by thirty-five new cities created by the United States Housing Corporation, the Emergency Fleet Corporation and its subsidiaries, and private industries for the accommodation of the great army of workers who formed the second line of defense in shipyards and munition factories.

Unlike the customary hastily built community these new dots on the map have been firmly constructed with a view to permanence. City planners, architects and sociologists have been allowed to let their imaginations run riot, resulting in thirty-five custom-made Utopias, valued in the neighborhood of \$55,000,000, which are soon to be placed on the market. Bids from realty corporations and from private interests whose endeavors may result in exploitation are to be barred and the present tenants of the houses will be given first opportunities of purchase, offering one solution for the present housing problem.—*The Nation's Business.*



For Increasing Production

Extension of the "Priestman System" for increasing production in manufacturing plants is strongly urged in England; the system is based on principle that proper method of payment is a standard wage for a standard day; all men employed under Priestman system are paid day rates and receive as a minimum the full rates plus any bonus that may be part of the wage agreement of the district; if without adding to a number of men employed or hours of work, output is increased thru greater effort of workers, wage is supplemented by a percentage equivalent to such increase. In one shell factory, the system increased output from 25,000 to 75,000 shells per week.



Laborers' Opportunity

What a wonderful opportunity organized labor has today if it were guided by leaders capable of sane thinking.

It is obvious that the principles upon which the American Federation of Labor has been operating for some time is "The securing of more pay for less work." The sacredness of a contract, the upholding of the fundamental principles of democracy, the principles of fair play are all foreign to its present program.

In this critical hour of our industrial lives, what a nation we might soon become if organized labor would cooperate with organized industry and wipe out of existence the Bolsheviks and all other enemies of modern society, now within its ranks, and unite upon a program to secure the maximum of production and thus secure lower living costs. In no other way can living costs be reduced and industry stabilized. Every increase in the wage scale of any group of labor, any reduction in the hours of work or of output but adds an increased burden on society as a whole. Labor must and does bear its share of this added burden whether it wills or knows it or not.

Organized labor's best interest is so apparently the best interest of industry that it is time organized labor began to think and not be actuated by the spirit that moves a mob. The question is, will organized labor think, or possibly the question should be asked are they capable of thinking, or will it be necessary for the iron hand of militarism to maintain order? It is up to organized labor to answer.—*Illinois Society of Architects "Monthly Bulletin."*

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products Such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

RUTGERS PLANS ACTIVE YEAR



WITH THE OPENING of the fall season, the Department of Ceramics, Rutgers College, New Brunswick, N. J., is planning for increased activities during the coming school year. As in the case of other ceramic colleges and schools thruout the country, the instruction work at this institution has been rather at a low ebb during the months of the war period past, and it is now proposed to engage to the greatest possible extent, not only in the matter of augmented studies and laboratory operations, but with increased number of students in the different branches of instruction.

Many members of the New Jersey Clay Workers' Association and Eastern Section of the American Ceramic Society are taking a hearty and whole-souled interest in this ceramic school and, as recorded in *Brick and Clay Record* a few months ago, an interesting plan has been developed to assure a good attendance for the forthcoming term and those to follow; this idea bids fair to highly effective attainments. It provides for each manufacturer of ceramic products in the state, sufficiently interested in the movement, to select a young person from his plant to become a student at the college, with the manufacturer defraying the cost of tuition and essential incidentals. The plan for this activity was proposed and approved at a meeting of the executive committee

of the organization held at Trenton last spring.

The idea of a new building to house the Ceramic Department at the college is still to the forefront, and it is hoped that as the months advance that a suitable appropriation can be secured from the Legislature to make this long-desired and long-needed proposed structure an actual reality. There is no question but that larger classes and the hum of ac-

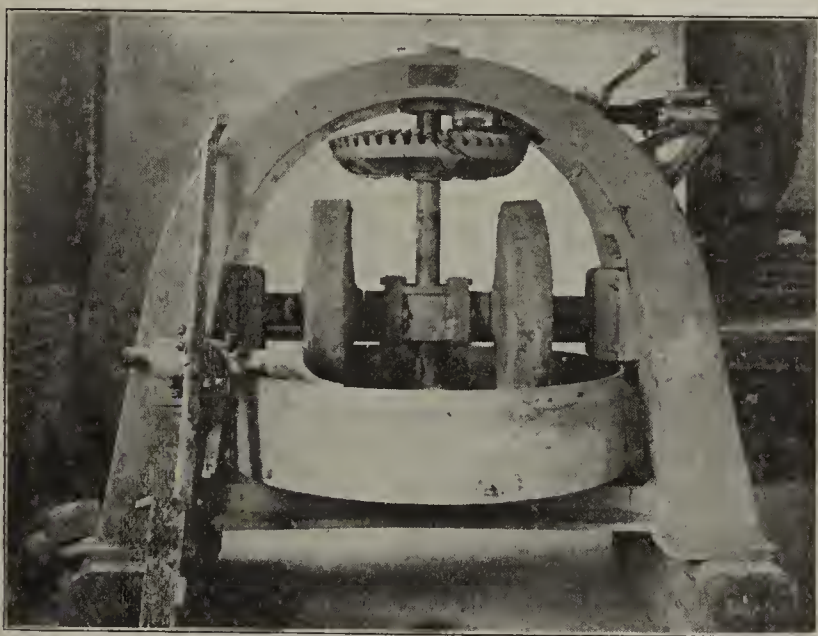


Fig. 3. Another View of the Dry Pan Used.

tivity at the school will go to impress the members of the Legislature with the necessity for this new building and give impetus to the big idea. This matter has been up for discussion at the different meetings of the New Jersey Clay Workers' Association, as set forth in this journal from time to time.

With enforced quietude in general instruction work at the school during the war, the time has been used to excellent advantage by Professor George R. Brown, director of the department, to assist New Jersey ceramic manufacturers in



Fig. 1. Dry Pan Which Is Also Used as a Wet Pan, Shown at Right, Near Window.

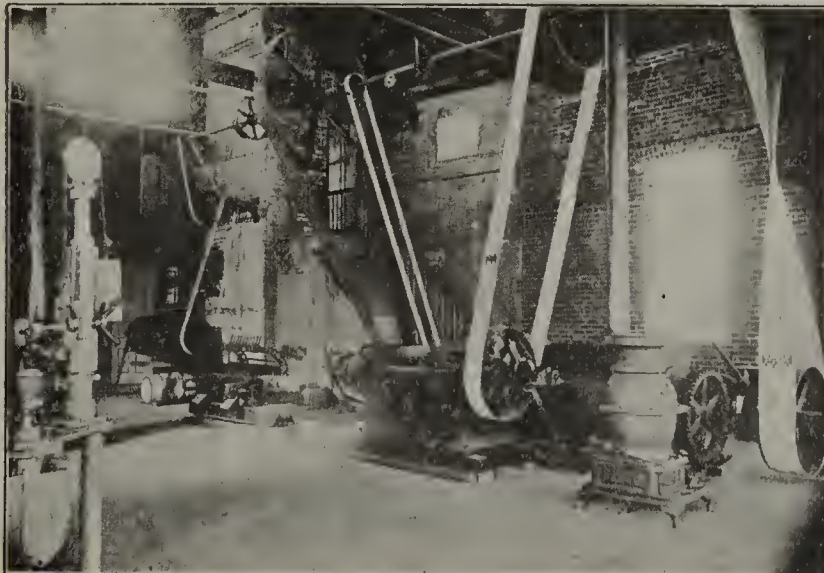


Fig. 2. Auger Brick Machine Used at Rutgers Ceramic School.

their different problems, and to conduct numerous practical tests for future utility. In connection with this latter work, much has been accomplished in the testing of state clays, and well over 400 specimens have been classified and arranged for the guidance and benefit of those in the industry. New ideas and methods have been developed and plans perfected for coming activities.

PRESENT SCHOOL.

With the plans for general expansion, it is interesting to note the present facilities at the institution for clay-working and ceramic instruction, and which, naturally, will be enhanced when the new school building comes to pass.

The brick manufacturing equipment consists of a large auger brick machine, shown in Fig. 4, as well as a small experimental machine of like type; a horizontal pug-mill; a dry-pan which may be used also as a wet-pan, and a down-cut board delivery table. The dry-pan mentioned will be noticed at the right, near the window, in Fig. 1, while another view of this machine is illustrated in Fig. 3.

The tile and pottery apparatus includes a miniature slip-house plant, as set forth in Fig. 4, with plunger, agitator, lawn-screen, slip-pump and filter; a four-jar glaze mill; large and small ball mills; a potter's wheel; combination jigger and pull-down; potter's pug mill; a hand-jigger; reversible bench lathe; tile press; wad machine; bench whirlers, and other miscellaneous equipment. The potter's pug mill mentioned is shown in Fig. 5.

The entire shop equipment is all of approved design and representative of the best in modern practice for the production of a wide variety of wares. It is laid out on the floor in the most advantageous manner to afford utmost facility and convenience in service. The overhead shafting, belt-connected to the different machines, is motor-driven, the motors being enclosed in a large wood housing, near the stairway, as will be noted in Fig. 2. At the rear of the shop there is a large store room.

A two-story wing extension to the main building is divided into two rooms on the first floor. One of these rooms is given over to equipment for testing work, while the other forms the kiln department. In this latter room there are two gas-fired kilns, and two of oil-fired type, used for the burning of the test pieces and ceramic wares produced in the

laboratory. A view of one of these kilns is shown in Fig. 6. Pyrometric equipment for high temperature measurements and for control in firing is also provided.

On the second floor of this wing, there is a fully equipped laboratory for the physical and chemical testing of ceramic materials of all kinds. The equipment is of high-grade man-

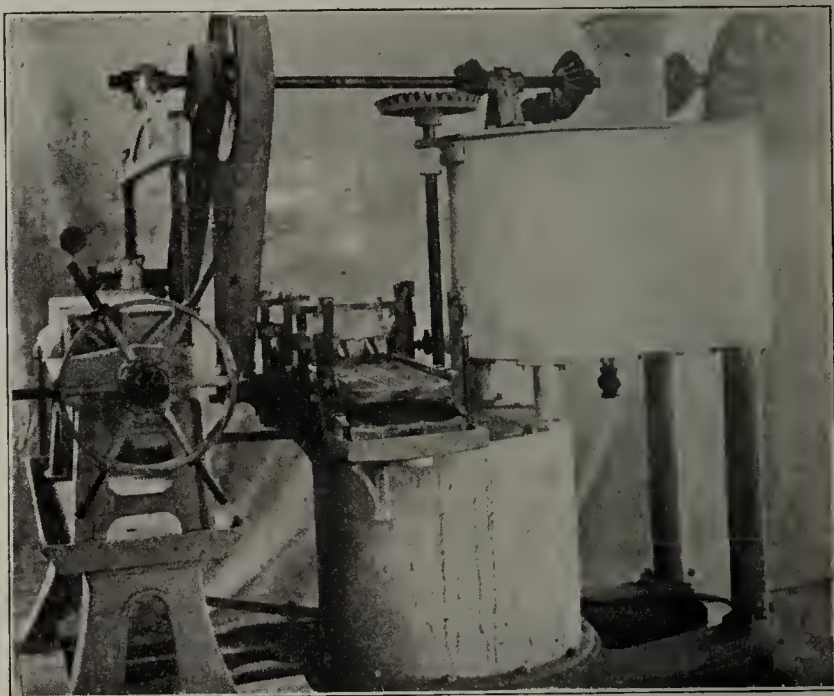


Fig. 4. A Miniature Slip-House Plant.

ufacture and approved design. Adjoining this room, a large class room has been arranged, where excellent facilities are provided for proper instruction.

In passing, it is interesting to note that the school has a fine and replete library, embracing the best of available works on ceramic and allied subjects, as well as volumes of *Brick and Clay Record* and other periodicals. An interesting collection of ceramic wares has also been arranged, and this is being added to constantly.



Favorable progress is being made upon the construction of the new plant of the Scio (Ohio) China Co., of which William T. McNutt, of East Liverpool, is at the head. It is likely that the capacity of this plant will be increased before the pottery is ready for operation.



Fig. 5. The Potter's Pug Mill Used.

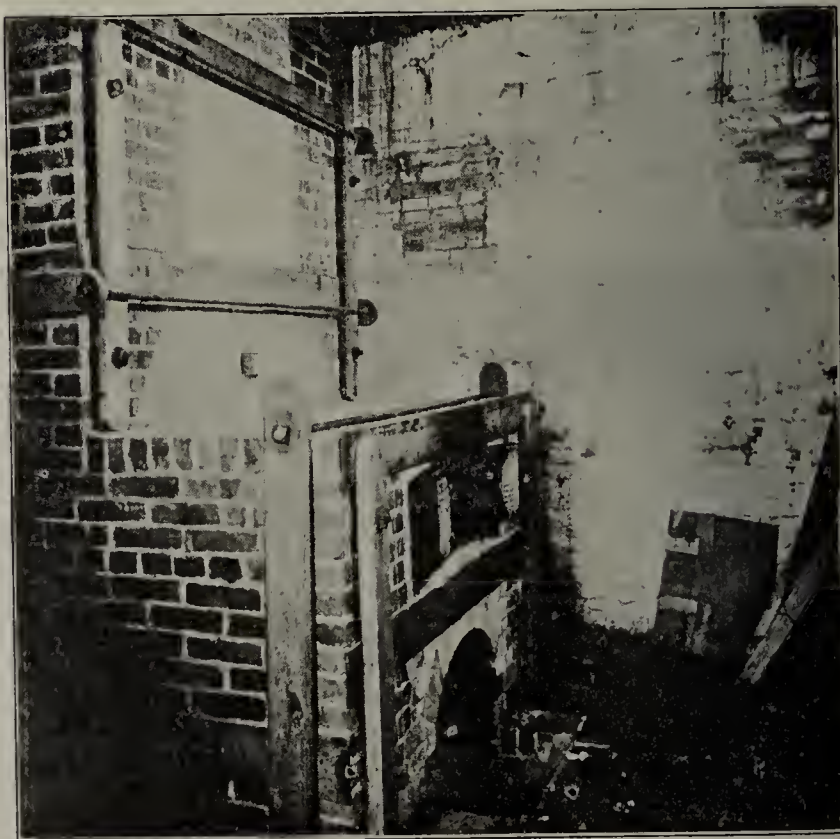


Fig. 6. View of One of the Kilns.

No Falling Off in Generalware Demand

For the last month or so all generalware potteries have been sold up for 1919, and all orders received for immediate shipments have been refused. The buyers have been advised that their wants would be taken care of as soon as possible, but that delivery before the first quarter in 1920 is a matter out of the question. There has been more active buying of pottery products during the last six months than the trade ever before experienced. It has been one of the problems of the manufacturers to supply the demand. From time to time production has been held up either by this or that cause, so that in the end all early season orders have been more or less delayed in shipment.

The fuel situation at the present time is one of the more serious problems that is confronting the manufacturers. The few days of cold weather has caused a loss in kiln production, as the manufacturers were not permitted to light their kilns in regular rotation, and a longer period had to be taken to fire off those that were already lighted.

Where manufacturers have been using coal for kiln fuel the situation at times has been more acute. In some instances only enough coal is in hand to fire a few kilns, and reserve stocks are being depleted. Very little coal is being received by these pottery manufacturers.

While the car supply is good there is delay at times in the movement, this also on account of the fuel situation, as some roads are reducing the number of trains and this action is reflected in the slow movement of freight. With the coal situation cleared and an open winter following, the movement of finished pottery products will continue on at the present high level.

There is no falling off in the demand for generalware. If anything, the demand is increasing. While buying for the current season is now a matter of history, buyers continue to visit the market and place orders for first, second and third quarter delivery in 1920. Next month will witness still further activity in buying. The jobbing interests report an unusual demand from their trade for generalware, and stocks of jobbers are more or less depleted. Department store buyers are reporting an unusual demand for dinnerware, and already their reserve stocks are being brought out. This indicates that the January buying will be far greater than that experienced during the same month during the last decade.

* * *

Heavy Demand for New Dinner Shapes

A very heavy demand prevails for the new dinner shapes which the various pottery manufacturers are showing for 1920 delivery. In some instances these new creations will supplant existing shapes. Buyers are pleased with the new lines of designs, and all of the offerings give early promise of becoming very popular among the buying fraternity. The bulk of the new shapes are of plain design, which permits the widest latitude in decorating altho a few new fancy shapes are to be marketed.

* * *

Trenton Potteries Operating at Capacity

The Trenton, N. J., pottery district continues along at maximum speed. Practically all plants of this character are operating at capacity production, or to that point as allowed by the labor and fuel situation. While there is no material shortage of coal at the present time, if the strike in the coal fields continues for any duration of time, local plants are sure to feel the effects. The difficulties in securing good labor, which are so generally well-known, have gone to handicap desired output. The chinaware

plants are very busy, and the call for all grades of material of this kind is strong; the demand for hotel ware and cheaper varieties is particularly keen. The porcelain ware plants also report things as being very active, and there is no let-up in the influx of orders for different standard specialties. The sanitary ware plants are coming around in good fashion, and the resumption of construction work in the matter of large projects such as hotels and public buildings, is making for excellent business.

* * *

Sanitary Pottery and Electric Porcelain Business Shows Increase

A steady increase in the demand for sanitary pottery is being reported by all interests connected with that industry. The sanitary plants in the West Virginia district are working practically full time, while those in the Trenton, N. J., territory are being favored with some excellent business. This is all due to the increased building activity throughout the country. It is known that as additional building is being contemplated for the spring of 1920, there will follow an increased demand for all sanitary pottery products.

The electric porcelain business is also in a rather happy condition, and all of these plants are reporting good business on file and a lot of new inquiries being received. No small amount of foreign business is now being taken care of by these manufacturers, and more is in sight. The electric porcelain specialty business is also in good shape, and much business is being booked by the manufacturers from that quarter.

* * *

Additions Being Made at Pottery

Improvements costing \$50,000 are underway at the plant of the Shenango Pottery, New Castle, Pa. The pottery is installing a crusher so that the materials used at this plant in the manufacture of its product may be crushed more uniformly, insuring a better product. A new boiler house and boilers, a new crushing house and crusher, a new decorating shop, an additional slip house and a new kiln are included in the list of improvements being made, all of which will be completed before the first of the year it is hoped.

* * *

Sagger Machine Proves Boon to Potters

The increased use of the sagger machine in pottery plants in the Upper Ohio Valley has been a boon to manufacturers. Individual stocks of sagers are no longer low as was formerly the case before the machine was introduced to the trade, and also the pottery owners do not have old conditions to contend with. The machine now in general use is the creation of a Trenton, N. J. concern, and ere long the improvement will be installed generally in all plants, both generalware and china potteries.

* * *

The Fords Porcelain Works, with plants at Perth Amboy and Fords, N. J., is operating at capacity production, with labor being the one real hindrance to larger output. This company makes a fine high-grade line of sanitary ware, and the production of certain specialties exceeds in aggregate the collective output of all other manufacturers. The resumption of building operations has brought about an influx of orders for material, and these are piling up to insure maximum output for many months to come. Abel Hansen, president of the company, gives personal attention to all features of the business.

The SUPERINTENDENT

Helpful Hints for Practical Men
Whose Problem is Maximum
Production With Minimum Cost

Advice on Care of Coal Shortage Piles

Not all, but some brick manufacturers were fortunate enough to get a sufficient quantity of fuel before the strike came on, to keep them running for a period of a few months or so. This coal was stored in piles and some of them are already showing signs of catching fire. It is very essential to follow certain rules in storing coal but even then, sometimes, the coal will begin to heat and show signs of spontaneous combustion.

The losses which occur from storing coal may be considered as being due to oxidation. In this connection the general fact should be borne in mind that the rate of oxidation increases with increase of temperature. Also we should remember that coal is a very poor conductor of heat, so that any heat occurring or being generated in the interior of the coal pile stays there. These two facts indicate that when oxidation once begins, even tho at a low temperature, it generates a small amount of heat; this heat is insulated from the outside air, and, being retained, tends to increase the rate of oxidation. Thus one action aids the other and the oxidation increases at a definite rate, those compounds easiest to oxidize being attacked first.

The addition of a small amount of water to a hot spot in a coal pile will only aggravate the trouble. The water becomes heated as it passes thru the hot portion and then heats up other portions of the pile not previously affected and thereby furnishes the initial heat to spread the trouble. Hence, it has usually been said in various bulletins on this subject, that the addition of water to a coal pile would only increase the fire hazard. It has been suggested to dig out the coal at points where the coal was becoming heated to a danger point. This however, is not always practical, as too many hot spots may develop at the same time.

If a relatively large quantity of water be used, the temperature of water flowing thru the coal approaches normal. Thus by pouring a large supply of water upon the pile it will be possible to put out the fire and without the danger of heating other portions not previously heated up. This is a very delicate point and should be treated with caution. Always be sure that the water flowing away from the hot spot is at a relatively low temperature before stopping the addition of water to the pile.

It is a good plan to go over your pile every two or three days with a thin round rod of about one-half inch diameter, sharpened at one end. By thrusting the rod down into the pile and allowing it to remain a minute or two and then withdrawing it you can tell by feeling the rod if the coal is heating and just how far the warmest spot is from the surface.



Prepare Plant for Cold Weather Operation

With the approach of winter comes the unpleasant thought of increased difficulties in plant operation. Business is good now and everything points to a very active

spring next year. In view of this, many managers are planing to operate thruout the winter months as much as possible in order to have the stock on hand with which to meet the demand. Hence, every precaution should now be taken to bring the plant in first-class condition for every repair that has to be made in cold wintry weather is considerably more expensive than at the present time because of the increased difficulties met with in working under unpleasant conditions.

With this in mind *Brick and Clay Record* urges the superintendent to go over his plant carefully and see that everything is in good working order. All outside machinery, especially, should be examined, such as the steam shovel, clay cars, incline, dry pans and bucket elevators. Get out your monkey wrench, grease pot and oil can and tighten up the loose screw, bolts, etc. and oil all sliding surfaces, keeping an eye open for any parts that may need repairing.



To Prevent Decreased Screening

Among the winter difficulties experienced in clay plants is the decreased capacity of the dry pans. In wet weather and winter about one-fourth of the material which is poured upon the screens fails to pass thru them and is returned to the dry pans, thus slowing up their capacity. To check this and force all thru, three swinging baffle doors of sheet metal may be suspended at spaced intervals over the screen to throw and spread the dust down onto it. They should be weighted down with iron so as to prevent their swinging to such a height as to make them ineffective.

By using these baffle doors, the dust is thrown from the buckets against the first one and then falls down and spreads upon the screen. It will then roll downward and strike another baffle door, and so on, until it finally reaches the tailing spout. However, by the time it reaches this point the dust that is sufficiently ground will have passed thru the screens. The doors should be bent to a slight "V" shape to spread the dust that naturally tends to follow the central channel in its course down the screen.



To Prevent Broken Pan Plates

It is hardly necessary to mention the fact that it is injurious to run a dry pan or wet pan empty. Such practice usually leads to broken screen plates and breaker arms and causes considerable annoyance. To obviate this trouble, raise the mullers to a point high enough to clear the plates. Thus, when a pan is empty the mullers cease to revolve. To accomplish this with pans having side bearing muller shafts, jack up the mullers singly or raise them with a spring pole. Lift the bearing block and insert a steel block one-half inch under it. If you can bolt this block in, or in any other way secure it permanently, do so. With pans having suspended mullers, raise the mullers and take up sufficient chain to raise the mullers about one-half inch above the breaker plates.

QUESTIONS *and* ANSWERS

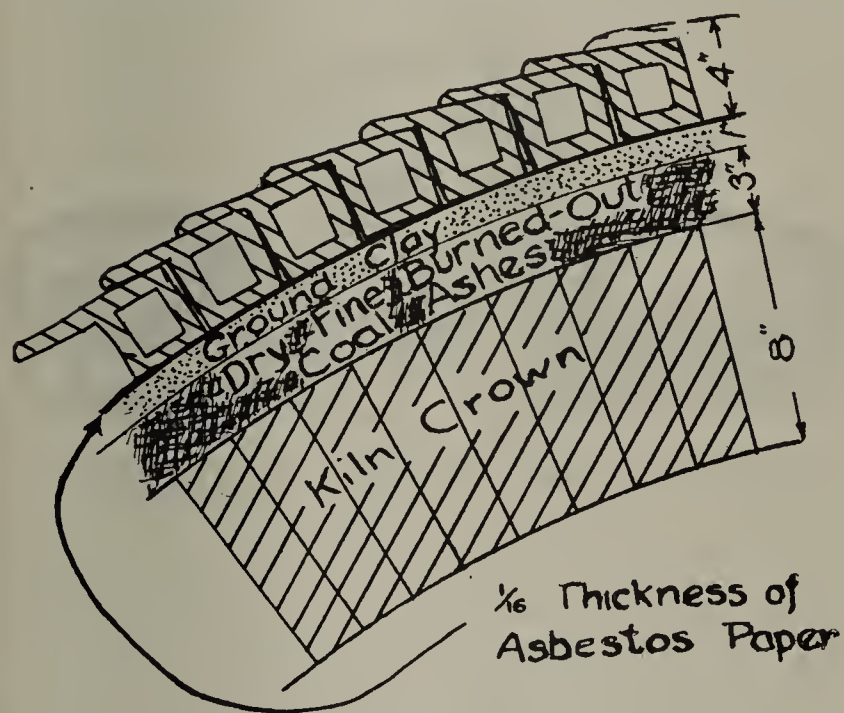
The Best Authorities in Every Clayworking Branch are Called Into Consultation—Their Advice is Free to You, Thru These Columns

Making the Kiln Crown Waterproof

Since publishing Question and Answer No. 918 Illinois regarding the waterproofing of kiln crowns, which appeared in the October 7 issue on page 710, and which is printed below, additional information has been received which is also published herewith.

Please advise us the best economical method of rendering kiln crowns waterproof against leakage. Our crowns are of fire brick and laid "headers." It is only nine inches thick and not covered with platens. Thus far we have been using a mixture of clay, sand, lime and a little cement, but a coat lasts but a short time and it is not impervious to a long hard rain.

A cheap and satisfactory method of rendering kiln crowns waterproof, has been searched for for a long time. We doubt if there are very many plants that have found a way to waterproof their crowns that was permanent.



Section of Kiln Crown Showing How to Make Crown Waterproof

One very good method has been to cover the crown with a layer of ashes, clay or brick bats and then cover this with a slush of cement-lime mortar.

A substance known as "Nox-Aer-Leak" has come to our attention lately which may possibly answer the purpose. This material is put on as follows: one-quarter inch layer is placed on the kiln crown before the kiln is ready for firing and then after the burn has been completed another quarter-inch layer is laid upon the first layer and the process repeated. This is done four times until finally the thickness of one inch is obtained. The first three layers will tend to crack but it is claimed that after four coats have been applied no more cracking will result and the crown will be rendered waterproof. At the present time there are quite a number of plants experimenting with this ma-

terial, but to date have not had time to make all the applications and hence we are unable to determine the practicability of this substance. However, it shows promises of making good.

J. W. Schreinen, superintendent of the Gethmann Brick Co., Gladbrook, Iowa, writes as follows:

"In reply to 918, Illinois, regarding kiln crowns. Clean your kiln crown of all loose stuff. Take some good black roof paint that you use to paint asbestos roofing or any other kind of roofing and put it on the crowns with a 3 or 4 knot roof paint brush. Fill all of the cracks and you will have a kiln crown that will shed the water during the season. Next season repeat the process. Our kiln crowns never leak."

N. Hermes, superintendent of the Muskogee (Okla.) Vitri-fied Brick Co., has supplied the following information:

"In answer to 918 Illinois in regard to making kiln crowns waterproof. Our kiln crowns are of course crowned with headers nine inches long, making the crown nine inches thick. We then lay a flatter course over the top of this, then grout this with a mixture of sand, cement, salt and ground brick shale or clay.

"We find that this will keep a kiln from leaking for about two years, at the end of that time all that is necessary is to give it another grouting or wash. The shale makes the body, the cement keeps it from washing off the kilns, the sand keeps it from cracking before it gets dry, and the salt keeps it from cracking when the kiln is hot. Have tried several different ways of protecting the crown of a kiln but find that this is better than anything else we have ever tried.

"A mixture of salt and cement is also a great protection to the inside of the kiln; just wash the kiln with a thin wash and after two or three burns the inside of the kiln will be all glazed over, which is a great protection to the kiln and also helps to hold the heat."

Furthermore, H. R. Straight, of the Adel (Iowa) Clay Products Co., has supplied the following interesting and instructive data:

"We have a method of covering the kiln crown, that is so far ahead of what is suggested that there is no comparison.

"This method as shown in an accompanying sketch, not only waterproofs the crown but prevents a large amount of radiation. As close as we could find out we are saving 12 per cent. fuel to burn the kiln which would otherwise be lost by radiation from a bare crown.

"The weight is not excessive but it does take a good crown to hold it with a little more pitch than is ordinarily given.

"The tile as laid on the top are not laid in mortar at all and are not absolutely waterproof, but since we have used them we have not noticed a single block washed in the kilns.

"The tile that are laid on top are a patented proposition that we first got out for our corn cribs but if any of your readers would desire to use this principle we would be glad to help them and the charge would be very small."

How Can Holes in Brick Be Made?

926. *Massachusetts*—We are making a stiff mud clay brick. Can you give us some information with regard to putting three holes thru our brick with an idea of reducing the weight of the brick and possibly help the burning of our product?

How large a hole shall we make and how large a core will be necessary to make the required holes? Should this core extend all the way thru the die or only part way? Of the brick that comes into our territory, only a very small percentage have these holes and we presume there is some objection in the manufacture of this kind of ware. If you could tell us the advantage or disadvantage of the method of manufacture, we would appreciate it very much.

One of the advantages in making core brick is that less clay is used and a lighter product made. It also aids considerably in burning. If you have a carbonaceous clay the carbon is easier and more quickly driven off than by making a solid brick. The core should extend all the way thru the die.

Some of the disadvantages in making this kind of brick are that often trouble in cracking both in drying and burning results, due to the holes. However, if your clay will stand the treatment, it is probably an advantage to manufacture core brick. The size of core that would be necessary to make the specific size hole would depend upon the shrinkage of your clay and this you could figure out by knowing the burning and drying shrinkage.

We are quite sure that most any of the clay machinery companies are in a position to supply the core dies and by writing them you may obtain additional information on this subject.

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Amount of Gas Required to Burn Brick

927. *West Virginia*—We would like to know what is considered a fair average quantity of natural gas required to burn one thousand shale common building brick in up-draft kilns. Any information you can furnish us on this subject will be greatly appreciated.

A fire brick concern in Pennsylvania burns its fire brick in round down-draft kilns to a temperature of about 2,200 deg. Fahr., and requires 18,000 feet of gas per thousand brick. These figures would undoubtedly be too high for burning shale brick in up-draft kilns.

The following formula can be used to figure the comparative costs of different fuels for the same heat value:

$$a \times b$$

———— = price per million B. t. u.

price \times 1,000,000

a = B. t. u. in unit quantity (1 lb., 1 cu. ft., etc.).

b = number of units (1 ton, 1,000 cu. ft., etc.).

price = cost of b (price per ton, etc., expressed in cents).

Natural gas is generally figured as having 1,100 B. t. u. per cubic foot. Fuel oil has a value of 19,500 B. t. u. per pound; Pocahontas coal from West Virginia, 14,550 B. t. u. per pound; Youghiogeny, Pa., coal, 13,720 B. t. u. per pound; and Hocking Valley, Ohio, coal, 11,875 B. t. u. per pound.

The above formula takes into consideration the heat value alone, but in considering the use of various kinds of fuel, it is necessary to know the advantages of one over the other outside of the advantage of less cost.

One prominent superintendent in Oklahoma, has supplied the following information:

"The amount of natural gas that it requires to burn brick in up-draft kilns varies. It depends upon the amount of heat it requires to burn a particular shale. Also, the heat

units in natural gas vary in different parts of the country. I have burned various shales with natural gas in different localities and find that it requires from 12,000 to 15,000 cubic feet of natural gas to burn 1,000 brick.

"At our Muskogee plant we have a very carbonaceous shale and it requires 2,000 degrees Fahrenheit of heat to burn our ware. This takes from 12,500 to 14,000 cubic feet of gas per 1,000 brick. Shales that burn off at 1,800 degrees can be burned with 12,000 cubic feet of gas or even less if it is good dry gas where the heat units run high."

Another superintendent states that the quantity of natural gas required to burn one thousand shale brick in up-draft kilns varies in his experience from 25,000 to 30,000 feet per thousand brick. This plant is located in Kansas and the amount seems extraordinarily high but may be due to a poor quality of natural gas.

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Makes a New Product From Clay

The accompanying photograph illustrates a new use to which clay has been applied by an Illinois manufacturer. The Gates Fire Clay Co., of Colchester, Ill., has designed the stock feeder which is shown in the accompanying illustration, and which is made in one operation by a special die that is being patented.

The die embodies principles entirely new and can be used on any large sewer pipe press. The shell and hopper are pressed in one piece leaving only the feed holes to be cut by hand.

The introduction of these feeders has been only recently started but so far the experience of the Gates Fire Clay



VITRIFIED CLAY. GLAZED. EVERLASTING

Co. has been very satisfactory. There are many superior points concerning these feeders which cannot be duplicated in others. Thus far but one size is being made, measuring about 29 inches in diameter and 40 inches high with a capacity of eight bushels. The manufacture of other sizes will eventually be carried on.

The advantages claimed by the Gates Fire Clay Co. for this new stock feeder are, that they won't rot or rust; hogs cannot chew them to pieces; absolutely unaffected by frost; unaffected by salt, ashes or mineral feeds; hogs, cattle, or horses cannot upset them; they will conserve feed, and have a capacity of eight bushels.

This new use to which clay products is being put may prove to be an important addition to the industry.

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Wyoming Brick Man Inspects Plants

Carl F. Kneisel, secretary of the Sheridan (Wyo.) Press Brick & Tile Co., visited with *Brick and Clay Record* while stopping off in Chicago on his way back to Sheridan. Mr. Kneisel was visiting relatives and friends near Louisville, Ky. and also inspected clay plants in the Terre Haute, Ind. and Danville, Ill. districts.

IN *the* WAKE *of the* NEWS

Being a Brief Mention of a Host of Interesting Happenings in the Varied Fields of the Clayworking Industry

Howard Frost Visits Eastern Brick Centers

Howard Frost, president of the Los Angeles (Cal.) Pressed Brick Co. visited the offices of *Brick and Clay Record* during his sojourn in this section of the country. He visited brick centers in western Pennsylvania, around Columbus, Ohio and various other centers.

Arthello Ross Root Passes On

Arthello Ross Root, 66 years of age, a well-known traveling salesman for the firm of Chambers Brothers Co., Philadelphia, Pa., died at his home in Philadelphia on November 21, of heart disease.

Mr. Root was born in Wilkes-Barre, Pa. and was a descendant of a distinguished line of Colonial ancestors. During his entire life he made a study of the history of Pennsylvania. His collection of histories relating to the Wyoming Valley is said to be the most complete in the state.

For the last twenty-four years Mr. Root has traveled for Chambers Brothers Co., manufacturers of brick-making machinery, and previous to this connection was in the employ of the C. W. Raymond Co., of Dayton, Ohio. He was a man who had the respect of all whom he approached and desired to do business with and has many friends in the clayworking industry.

* * *

Edward C. Stover, of the Trenton (N. J.) Potteries Co., was stricken ill suddenly on the street on November 17. He was given immediate first-aid treatment and removed to his home. It is reported that he is convalescing.

* * *

James T. Howington, general manager of the Coral Ridge Clay Products Co., Louisville, Ky., is making a southern trip, taking in Nashville, Birmingham, Montgomery and other points.

* * *

William H. Hoagland, general manager of the Claycraft Brick Co., of Columbus, Ohio has been elected a director of the Columbus Chamber of Commerce.

Will Change Kilns to Burn Fuel Oil

Joseph Schmidt, Jr., of Schmidt & Fender, Pocahontas, Ark., states that they are at present burning their products in scove up-draft kilns and round down-draft kilns, but are contemplating changing same to burn fuel oil. Business has been very good this past season. The plant is now down for the winter months.

Arkansas Plants Short on Production

The Fort Smith Brick Co., formerly the Burke Brick & Tile Co., of Ft. Smith, Ark., states that the demand for brick in that section is good, most plants being short on production. The prevailing price on common brick is \$16 at plant and on rough texture face brick \$25 to \$30.

Several large brick buildings are under construction at the present time and more are contemplated. The company has been experiencing severe labor conditions. P. W. Leming succeeded A. J. Kautz as superintendent of the plant on September 15. The Ft. Smith Brick Co., recently opened a selling office in the Gazette building, Little Rock, Ark.

To Install Oil Burning System

W. R. Gibson, of the Dardanelle (Ark.) Brick & Manufacturing Co. says that business could not be better in his territory and that the company is receiving more inquiries for face brick than they can fill. Mr. Gibson recently made a trip to Blanchard and Shreveport, La., to see F. M. Brown, who is to build a brick plant at Blanchard, La., where he has some fine clays and will install a stiff-mud system. The Dardanelle company is planning to install an oil burning system and some rough texture apparatus during the coming winter. They are also planning to build more kilns. The plant has been leased by Wm. R. Gateson, who expects to make some changes in the character of the products soon. At present they are making a dappled grey face and a bright speckled brown, also red and buff brick. Mr. Gibson reports that prices are very good at Dardanelle.

Hope Brick Works Installing New Machines

Business is extremely good at the plant of the Hope (Ark.) Brick Works. The company bought a new Hercules Sr. brick machine to install in place of the old one, and also purchased a new tile machine and will install same soon. They will also increase their drying sheds twenty per cent. The company is planning to make more brick next year than any time in the past and will also manufacture drain tile. N. P. O'Neal writes that he intends to "raise Duroc Jersey hogs, make big crops and work like a mule on the brick yard between times."

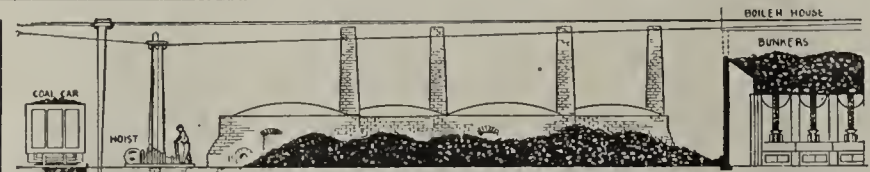
No Let Up in San Francisco Building

Up to the present date, there has been little or no let up on building activities in this section of the country. The housing conditions have been so needful of improvement for such an extended period that it will be some time yet before the demand for structures of all kinds is satisfied. At least, this is the opinion given out by the general run of building operators and building material manufacturers.


Brick and other clay products dealers are not allowed any time in which to complain of business—they are too busy getting orders out on time and speeding up the output of the factories. The labor situation is in fairly good shape considering the general condition thruout the country; and the old saying, "It's an ill wind that blows nobody good," is apropos of the brick manufacturer, for the continued shipbuilders strike has been the means of furnishing him with some badly needed workers.

The numerous plants in the vicinity of San Francisco and trans-bay cities are working up to the limit of their

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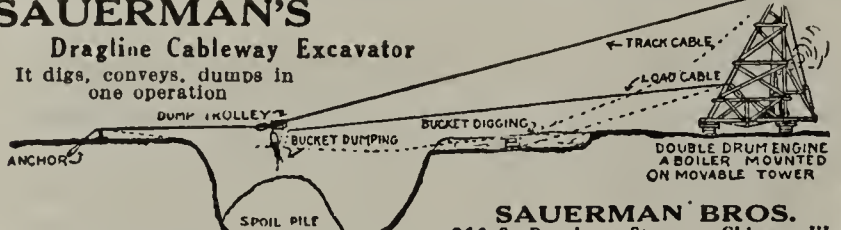
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capacity and in many instances dealers report that orders are behind.

A type of building which is going up in quantities throughout the state is the automobile salesroom and garage, while a good many of these buildings are of reinforced concrete, there is a considerable amount of brick used—in fact not a few are constructed entirely of brick or hollow tile, or both. The interior of the state is closing a very prosperous year and the added number of motor cars purchased this season has created a demand for garages, service stations, sales rooms, etc. that has in turn, stimulated the brick industry in no small way.

Will Build New Plant to Make Hollow Tile

The Los Angeles (Cal.) Brick Co. states that business is very good. They have enlarged one of their Los Angeles plants to manufacture roofing tile and are planning to build a new plant for the manufacture of hollow tile, roofing tile, face brick, etc., to cost \$150,000. Mr. Gus Larson, formerly with the Los Angeles Pressed Brick Co., is now general superintendent of the three plants of the Los Angeles Brick Co. The company is now making roofing tile and has secured a patent on universal unit hollow tile. It is their intention to lease territories nationally on a royalty basis for the manufacture of universal unit tile. Mr. Requa, an architect of considerable ability, will have charge of the universal unit department. He had charge of the Government construction work at Rockwell Army Aviation Field at San Diego, and is the inventor of Universal unit tile.

Visalia Concern Acquires New Clay Land

It was recently reported that the Harry C. Wilbur ranch, located about four miles east of Fresno, Cal., on the Sanger road, has been purchased by the Pioneer Brick Co., of Visalia, Cal., and that the concern intends building a factory there. The property consists of 80 acres and it is stated that samples of the soil were found satisfactory for brick manufacture several years ago. The new owners, John Etzenhauser of Visalia and J. W. Fewel of Fresno, are convinced that they have acquired a proposition which will meet the requirements of the brick industry in that vicinity. The shortage of suitable clay for brick making in the Fresno district has compelled many of the brick companies to haul materials in from great distances, and it is thought that the new holdings will go a long ways toward solving the clay problem.

Paso Robles Needs Brick Plant

It is stated that an effort will be made to arrange for the building of a brick plant at Paso Robles, Cal., early in the spring of 1920. The unusually large deposits of excellent brick clay and the demand for the product would make such a plant most desirable in the opinion of business men of that section, so the matter is to be taken up in detail at the next meeting of the San Luis Obispo Chamber of Commerce.

McNear Yard Has New Trackage System

W. W. Dennis, of the McNear Brick Co., San Francisco, Cal., states that business is so good that they are having difficulty in keeping pace with the orders received. The company is putting in a permanent trackage system about the plant, with turntables and transfer system complete to handle in cars of five hundred, from kiln to barge.

Will Install Stiff-Mud Plant

The McKnight Fire Brick Co., Porterville, Cal., is making plans to install a stiff-mud plant complete for making brick, drain tile and building tile. The company reports business as being very good.

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The Bakersfield (Cal.) Unit Brick & Tile Co. has applied for dissolution.

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The Livermore Fire Brick Co. is enlarging its plant at Livermore, Cal. It is the intention of the company to double the present capacity.

Colorado Plant Making Improvements

The Diamond Fire Brick Co., Canon City, Colo., writes that the demand for all of its products has been very good for the past six months, altho the first three months of 1919 were quiet. H. F. Bowen, vice-president and treasurer, states that they have been experiencing a serious labor shortage for the past ninety days. The company is installing a new 150 h. p. boiler, and is also erecting a new 30 foot round down-draft kiln, the crown of which is to be insulated with Sil-O-Cel brick. The kiln walls are 30 inches thick and are of fire brick material thruout. The outer blocks are of two-thirds plastic fire clay, and one-third flint. They are 15 inches long, 8 inches high and 11 inches thick. The inner blocks are of the same size except 10 inches thick. The crown does not start off of 9 inch lining but on inner row of blocks. Special blocks are now being made for the erection of a 36 foot kiln which will be commenced as soon as the material is burned.

La Junta Brick in Largest Silo

J. H. Mayhew, who leased the plant of the La Junta (Colo.) Brick & Tile Co. last January, is now specializing

CONVENTIONS IN PROSPECT


December 18—New Jersey Clay Workers' Association and Eastern Section of the American Ceramic Society, Rutgers College, New Brunswick, N. J.

January 20, 21 and 22—Canadian National Clay Products Association, Prince George Hotel, Toronto, Ont.

February 16, 17 and 18—Common Brick Manufacturers' Association of America, Deshler Hotel, Columbus, Ohio.

February 18, 19 and 20—National Brick Manufacturers' Association, Deshler Hotel, Columbus, Ohio.

February 23, 24, 25 and 26—American Ceramic Society, Hotel Walton, Philadelphia, Pa.



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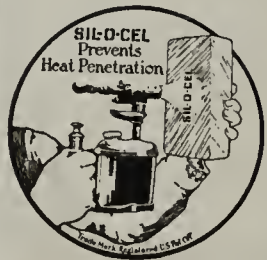
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Portable Model 322, High Resistance Type with internal compensator is especially desirable for Brick Kiln temperatures. May we quote on your equipment?

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PERMANENT HEAT PENETRATION
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at the plant of the Kansas Buff Brick & Manufacturing Co., Buffville, Kansas.

They say:

"It has cut the labor and fuel bill about 60%, and the powder bill about 50%. It paid for itself in the first three months; it saves enough powder each year to more than pay for its initial cost."

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BRODERICK & BASCOM ROPE CO.
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Manufacturers of

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Aerial Tramways
For Economical Haulage



A28

on silo and building block. This fall he supplied silo blocks for what is reported as the largest known silo in America to Earl Bennett, who lives about ten miles from the plant. The capacity of this silo is 1,000 tons of ensilage and it was filled to capacity in September of this year. Over one hundred silos were built in Otero County in 1919 showing the prosperous condition of the farmers.

Colorado Plant Completing Its First Kiln

The Grand Junction (Colo.) Pressed Brick & Tile Co., recently organized, will have its first kiln of one hundred thousand brick ready for delivery soon. A number of building operations which are being held up, temporarily, awaiting the delivery of brick by the company will soon be started.

Construction Well Under Way in Delaware

The building situation at Wilmington, Del., and vicinity maintains under an encouraging aspect. The turn of the winter season has shown no noticeable effect on operations, and while large projects, are in the minority, the volume of smaller work is helping to swell the total, keeping those in the industry quite busy. Residence and garage work take a prominent part in current operations, and for these brick and hollow building tile are being placed to extensive service. Just as houses are being erected in groups, so are garages, and the community idea prevails with increasing momentum. An interesting housing project has developed during the past fortnight, covering the erection of twenty-eight new homes at Davis and Thirteenth Streets, for William Coyne; the houses will be erected in blocks, and of popular priced type. Construction work is well under way on a number of local industrial projects, including two extensions to leather plants.

Good Stock of Salmon Brick Here

The Delaware Terra Cotta Co., Wilmington, Del., dealer in common brick and other burned clay specialties, reports a good demand for high grade common brick in and around the city at the present time. The prevailing price is around \$20, delivered on the job. The call for salmon brick, it is set forth, has fallen off quite a little, with the result that there is a good stock of this material on hand at this time; in fact, shipments of this grade of brick have recently been made to Baltimore to relieve the situation there. Labor conditions are not of the best, and coupled with the shortage in freight cars for desired shipments, the fuel outlook is not very bright. The fear is expressed that it may be necessary to curtail production, due to the inability to obtain coal.

New Incorporation at Delaware

The Refractory Products Co., Wilmington, Del., has been incorporated with a capital of \$900,000 to manufacture insulating brick, and other high grade refractories. The incorporators, all of New York City, are: Samuel B. Howard, George V. Reilly, and Arthur W. Britton, 65 Cedar Street.

Indications of Price Advances in Delaware

Building materials are operating under good call at Wilmington, Del., and vicinity. The outlying districts are prominent in the demand for materials, and large motor truck deliveries are being made to these parts. Common brick is moving in considerable quantities, with the best grades in popu-

lar demand; local dealers are asking \$19 and \$20, delivered on the job. Other burned clay products are more than holding their own in the list of important building materials, and hollow tile, clay tile partition blocks, sewer pipe, drain tile, and kindred specialties, are being used in good-sized quantities, and altho prevailing figures appear firm, there is every indication of slight advances at an early date. Face brick, terra cotta, and fire brick are other materials which are in popular call, and the last noted product is experiencing a little keener demand from that evidenced during the past few months. The prevailing price is about \$64 a thousand for No. 1 Standard, delivered.

Moultrie Yard Still Hard At It

The Nace Brick Co., of Moultrie, Ga., a summer brick yard, reports that it has more orders on hand than it can fill and expects to operate until bad weather forces a close-down. The concern intends to install a new brick machine this winter, also a dryer to dry 35,000 brick per day. W. W. Nace, president of the company, states that the territory surrounding Moultrie needs brick badly but having only a small plant he could not supply the demand. He expects to be in better shape to take care of this business next year. Manufacturing costs have been high he states, because of the labor situation, but business has been good despite the small profits. Mr. Nace writes, "The demand for 1920 will be larger in this territory from the outlook than in 1919."

Will Reach Out for Larger Territory

The Rome (Ga.) Brick & Tile Co. will build a dry house, trestle and make general repairs to its kilns and machinery this winter. Business has been very good with this company and Geo. C. Beysiegel, secretary and treasurer, reports that they will reach out for larger territory next season since the plant produces more brick than is needed for the territory covered in the past, having a capacity of 1,500,000 brick per month.

Georgia Plant Making Improvements

George O. Berry, of Columbus, Ga., states that business is good, altho he has been handicapped by labor and the present fuel trouble. He has recently installed a new 150 h. p. boiler in his new brick boiler house and built new round down-draft kilns. More kilns are to be built soon.

Columbus Plant Sold To Florida Concern

Shepard Bros. Brick Co., Columbus, Ga., have sold their plant to the Stockton-Gamble Co., of Jacksonville, Fla. They will manufacture common brick and Dennison interlocking tile.



The Standard Brick Co., of Macon, Ga., reports business very fair. The company has added building tile to its list of products.

Monmouth Plant to Commerce Operations

Work of rehabilitating the plant of the Monmouth (Ill.) Clay Manufacturing Co. will be started at once and the concern will commence to manufacture sewer pipe about the first of February, after the long shutdown. C. Carson Green, of the Monmouth company, stated that contracts have been let for two new power elevators and two new kilns, work



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is being licensed to manufacturers in the U. S. A. and Canada. It has earned the title of "Popular Tile" because it is easy to make, lay and sell, and is liked by the

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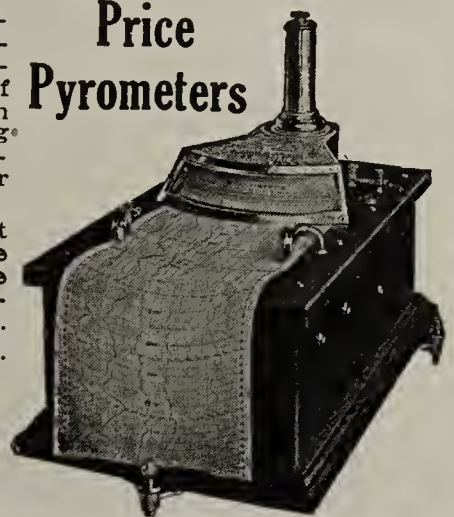
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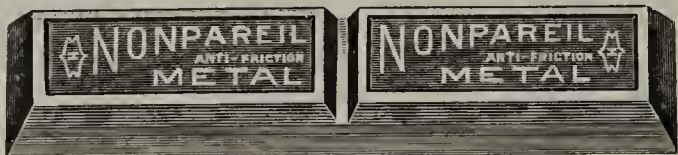
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"Have been using Nonpareil Anti-Friction Metal for many years, but at first only for babbitting shafting boxes at Dry Press Brick Works. Later tried it for babbitting clay grinder rolls, where we used Bronze metal. Find that it does as well and lasts as long as the Bronze. The Bronze boxes we had to have made, and when they were worn out, had to discard what was left to the scrap pile. Now whenever boxes have to be renewed, we can use what is left of the Nonpareil metal over again and do the work ourselves."
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on which will be started immediately. The heating plant of the factory will be overhauled and other improvements, to cost between \$40,000 and \$50,000, will be made, to put the plant in shape for a long run. One hundred men will be employed by the concern.

Danville Brick Co. Forced To Close Down

With a million brick in the various kilns, the Danville (Ill.) Brick Co., at Vermilion Heights, has been obliged to lay off 125 men, with just enough coal left at the kilns to complete the burning of the brick partially burned. The plant is out of coal, altho there is coal all around and some underneath the plant, but it is unavailable.

Change in Office Address

On November 15, the Silica Brick & Tile Co., Chicago, Ill., moved its general office from the Monadnock Block to the factory at 5901 W. 66th St., Clearing, Ill. The sales office of this concern will be maintained at the Building Material Exhibit, second floor, Insurance Exchange Building, Chicago.

To Reopen Brick Plant at Atchison, Kans.

Plans for a new \$50,000 company to take over the old Barry brick plant were announced recently. S. K. McCrary, county engineer of Brown County, Kans., and Joseph Bewley, of Netawaka, are the principal stockholders. Both were connected with the company when the plant was closed down several years ago, unable to compete with Oklahoma and southern Kansas brick plants operating on cheap gas.

Kansas Plant Forced to Close Down

The Lawrence (Kans.) Tile Co. has been forced to close its plant on account of the coal shortage. Alex. R. Batley, manager, states that they have five large kilns full which they are unable to burn until they can secure coal.

Will Enlarge Its Plant at Collinsville

It is reported that the Coffeyville (Kans.) Brick Co. will enlarge its plant at Collinsville, Okla., doubling the capacity thereof.

Coal Shortage Curtails General Production

Louisville brick men are considerably worried over the coal shortage, which has not only closed three or more brick companies, but which has closed down some other plants in the allied trades, and which threatens to curtail general production of building material and holding back of building operations. A few days ago the plant of the Kosmos Portland Cement Co. closed down on account of inability to secure fuel. The plants of the Standard Sanitary Mfg. Co., Louisville Varnish Co., Henry Vogt Machine Co., and several other big industrial companies, are facing rapid shut-downs. It is believed that at least ten big plants will be out of commission within ten days if fuel is not secured. Fuel oil is being supplemented in some of the big plants, but it is costly, and many plants have not the facilities for burning it.

The P. Bannon Pipe Co. is burning out a few kilns that had been made up before it ran low on fuel, and has not turned a wheel on new production for more than two weeks.

The Southern Brick & Tile Co. is completely down. The Louisville Fire Brick Works is operating its plant in Carter County, but is down at the Louisville plant. The Louisville Pottery Co. is on its last few tons. The Progress Press Brick Co. and Coral Ridge Clay Products Co. are fairly well stocked, and can run thru the first of the year even if they fail to secure additional coal.

Inquiries Brisk From Far South

It is reported by Louisville manufacturers and jobbers that there is a better demand from the far South than had been anticipated, this being due to the fact that there is a general housing shortage everywhere. In the far South winter does not curtail building to any great extent, and apparently winter operations will be on a large scale.

The Progress-Pressed Brick Co. reports that it has secured orders for more than a quarter of a million brick in the past fortnight, including one 50,000 lot going to New Albany; 200,000 in general lots; and about 50,000 face brick on small orders. Andrew P. Hillenbrand, Sr., stated that the company had enough orders on hand to keep it going at full capacity, and unless bad weather is encountered there will be a very short let-up this winter.

8,000 Cars of Coal on Kentucky Railroads

It is reported that there are 8,000 cars of coal on railroads in Kentucky. Industrial consumers are complaining over this fact, charging that the coal could be released to fill immediate needs, thereby releasing cars for reloading. Mines on the L. & N. lines in Kentucky are producing almost fifty per cent. of their normal output, as a good many are not unionized. Operators in Eastern Kentucky have made a compromise offer, which is subject to final decision of the leaders in the East.

Shippers report that the car shortage is gradually becoming worse, and that they are now having a great deal of trouble in securing cars. This report is general, some of the flour millers having been on a verge of a close down due to inability to secure cars.

\$2,000,000 Hospital Job To Be Let

Several of the leading brick and tile men of Louisville were down at Dawson Springs, Ky., recently, in an effort to secure some information relative to the Government's plans for building a \$2,000,000 hospital at that point. Bids for the general work will be opened on December 10. This promises to be probably the largest job of the coming year, and will take a considerable amount of brick, hollow tile, etc. There will be about twenty buildings on the grounds. Roads are now being built.



The Purinton Brothers Brick Co., at Augusta, Me., has recently completed the work of burning its second kiln of brick for the season, which completes the season's work with the exception of a little cleaning up of something like one million brick.

Demand for Brick Homes Strong

Baltimore, Md., construction work holds at top speed. Buildings of all kinds and of all sizes are under construction and being projected, and not a week goes by but what new projects involving large sums are making their appearance. The Baltimore district has "taken hold" in the matter of new

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Hollow Interlocking Brick.

A face brick and a backing all in one.

Non-continuous mortar joints.

Have the appearance of solid face brick.

License granted to manufacturers in United States & Canada.

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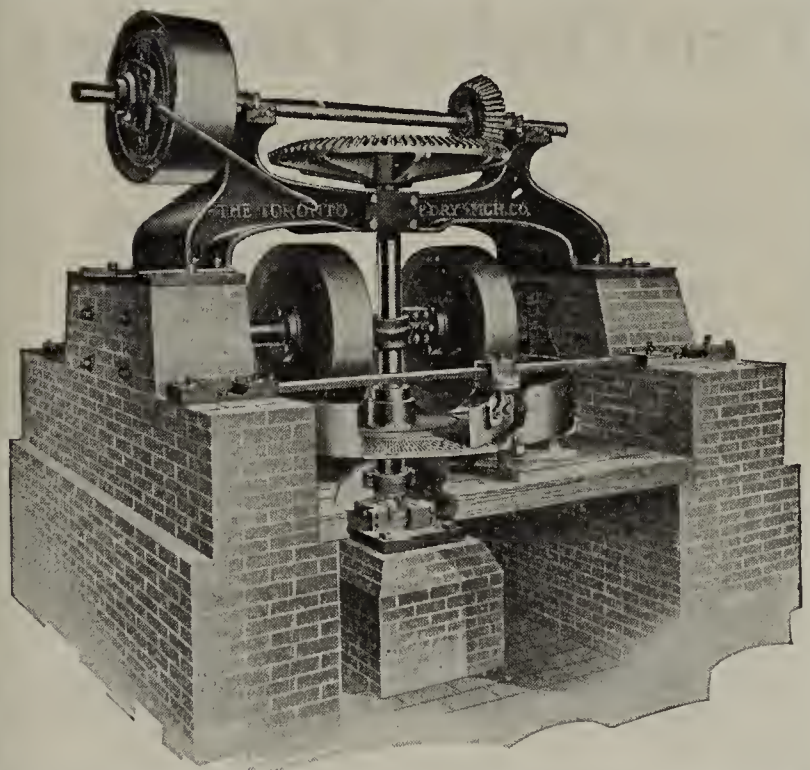
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For Grinding Wet, Semi-Dry and Dry materials. Made in sizes adopted by the best judges. We are in position to solve your grinding problems.

SINGLE, DUPLEX OR BATTERY INSTALLATIONS OF 8, 9 AND 10 FOOT PANS.

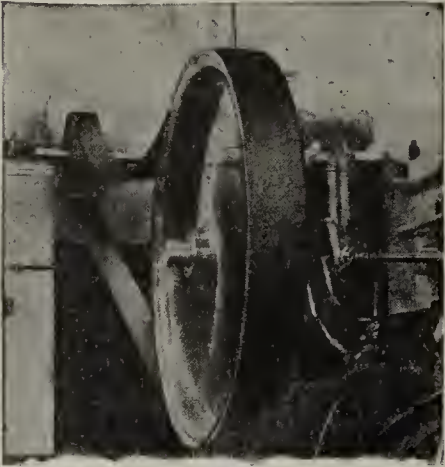
Write for Descriptive matter and prices on Pans Also Bulletins on Sewer Pipe and Tile Presses, Elevating and Conveying Machinery, Trucks, Barrows and other equipment for the clay products manufacturer.

THE TORONTO FOUNDRY & MACHINE CO.

Toronto, Ohio

Cost of Fuel Per Year	TOTAL BELT SLIP				
	3%	4%	5%	6%	7%
\$100	\$1	\$2	\$3	\$4	\$5
\$1,000	\$10	\$20	\$30	\$40	\$50
\$10,000	\$100	\$200	\$300	\$400	\$500
\$100,000	\$1,000	\$2,000	\$3,000	\$4,000	\$5,000

The above table shows the amount of money you can save by treating your main belts with Cling-Surface. Treat all of the belts and double the amount.



A Slack Cling-Surface Treated Belt in France. Full particulars on Request.

Cling-Surface Company
1029 Niagara Street
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For example, if you are spending \$10,000 per year for fuel, and if the total belt slip is 5%, the unnecessary loss due to slip is \$300. This money can and should be **SAVED**.

Put your belt slip problems up to Cling-Surface.

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24

building operations in a phenomenal way, and producers as well as mason material dealers have enjoyed the big benefits accruing thru unintermittent, enthusiastic activities. As in other eastern communities, the demand for homes is very strong, and every effort is being made to provide suitable housing facilities; the result is that many blocks of residences, as well as apartment houses, are now in course of construction, and as to be expected, with brick the predominating material. Industrially, the city and neighboring districts are forging ahead in a great way, and a large volume of work is current at Sparrows Point, Curtis Bay, Highlandtown and vicinity. This work involves millions of dollars, and will carry thru the winter with maximum operation, provided that the season remains open.

Basic Building Materials in Strong Demand

A canvass of the prominent mason material dealers at Baltimore, Md., shows that basic building materials of all kinds are in strong demand. The upward trend in prices is having no effect whatever on the call, and burned clay products, particularly of high grade quality, are well in the lead in matter of selection. Good high grade common brick is quoted at \$20 a thousand, delivered, and available stocks are none too plentiful. Fire brick is operating in the neighborhood of \$70 a thousand, and under particularly good call, owing to the volume of local industries operations. Face brick in prime selections ranges from \$35 to \$50 per thousand; the lighter colors, such as browns and tans, are in popular favor. Hollow building tile, drain tile, sewer pipe, etc., are in good call, and available stocks are moving rapidly. Local dealers are awake to the possibility of depleted supplies of important building commodities, and for this reason are placing orders well ahead for deliveries at the earliest possible date.

Active Campaign Now On

The Real Estate Board of Baltimore, Md., has opened up an active campaign to increase building operations to the greatest possible extent—a maximum never before attained. The slogan is "Progress, Development, Construction," with energetic effort set forth to show the possibilities of enlarged construction work in the greater city. It is pointed out that there is an unusually strong demand for warehouses, loft buildings, office buildings, dwelling houses, and apartments. The campaign is to bring increased interest on the part of the building operator, the developer, contractor, and affiliated factors. The movement gives evidence of unusual success, and is distinctly commendable in its far-reaching aspects.

Baltimore Business Getting Back to Normal

The Baltimore (Md.) Brick Co. reports business as gradually getting back to normal, and with encouraging outlook for a continuance of prosperous activities. While there is a strong, healthy demand for common brick, the condition in this industry, it is set forth, is not quite as it should be, owing to labor, fuel, transportation, and other elements upon which effective production is contingent. The company is now quoting prices of from \$18 to \$20 for good, hard common brick, dependent upon the extent of haul.

Boston Brick Prices Continue to Soar

The price of up and down sand struck brick, delivered on the job, continues to advance in the Boston market. Altho

Your Drying Problems

Our Research Department is equipped and available to investigate the drying of your products, and also to plan an equipment in which your drying may be performed, economically, quickly, and absolutely under control, in brief, satisfactorily.

You may obtain this service without incurring any expense or obligation.

Let Us Know Your Requirements

Proctor for CLAY PRODUCTS
DRYERS

THE PHILADELPHIA TEXTILE MACHINERY CO.

Drying Machine Specialists

Seventh Street and Tabor Road, Philadelphia, Pa.

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Main & McNab Streets

nominally the price is \$20 per thousand as much as \$22 is being asked in many instances and dealers are experiencing little difficulty in finding purchasers. Several important building propositions are in progress or contemplated in Boston, including two big bank buildings, and the prospects are for an increased demand for brick notwithstanding the approach of winter. The demand for buildings of every description in all parts of New England is so insistent that builders and dealers in supplies look for little, if any, let up during the winter except possibly in extremely cold weather when conditions may prevent outside work.

New Brick Concern for Boston

The Winchester Brick Corporation of Boston, has recently received a Massachusetts charter to do a brick and tile business. The authorized capital is \$300,000 and the incorporators are Arthur W. Leavitt of Everett, Margaret E. Buchanan of Cambridge and Mabel M. Gray, of Readville.

Turns Out 6,000,000 Brick

The Standard Brick Co., Grand Rapids, Mich., C. G. Easley, manager, has completed its run for the season with a production of 6,000,000 brick. It is reported the company has a stock of about 2,000,000 brick to meet the demand before the next season opens.

Mississippi Plant Enlarging

The Corinth (Miss.) Brick Co. is contemplating enlarging and improving its plant this winter. It has always used open air dryers but intends to put in a four track artificial dryer during the coming winter, which will take care of about one-half the output and the open air sheds will be used for the other half. The company is also building extra kilns so as to increase the burning capacity.

Tile Yard to Have Five New Dry Sheds

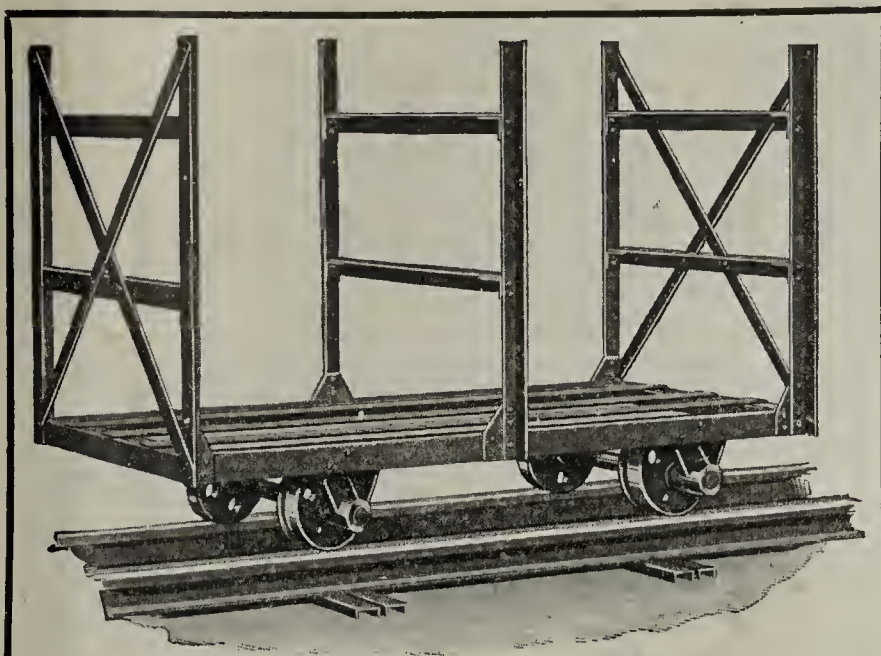
E. D. Buckman, proprietor of the Westpoint (Miss.) Tile Co., is planning to erect five new dry sheds and will install a machine to dig clay within the next few months. Mr. Buckman states that business has been very good and he is working hard to take care of the present market.

St. Louis Plants Hard Hit By Coal Shortage

The coal shortage is playing havoc with the brick, clay and glass industry in St. Louis. At time of writing several plants have completely suspended manufacture while almost all others are cutting down their forces to the minimum number necessary only to keep furnaces going. The glass manufacturers, and then the brick and other clay products manufacturers were first among the St. Louis plants to suffer. In the opinion of authorities controlling the distribution of fuel in the St. Louis district, the clay products industry is regarded as one of the least essential industries and consequently the fuel allotment to it was curtailed first.

If the coal situation is not greatly improved very soon, all manufacturers of this class will have suspended operation before this will have been printed. This statement is based on the general opinion of leading clay products manufacturers.

The Laclede-Christy Clay Products Co., the Scullin Steel



ALTERNATE heating and cooling is a severe test for any machinery. That's why Conkey engineers study conditions at your plant first hand before specifying the kind of material and construction to be used in your dryer cars.

The result is a product that stays on the job, and costs less to operate and to maintain.

Ask for a descriptive booklet.

H. D. Conkey & Company
Mendota, Ill.

You can get a higher price for your brick if you guarantee it will be

Scum-Proof

And you can do this with perfect safety by using

R. H. Precipitated Carbonate of Barytes

It neutralizes the salt in your clay so that it cannot appear on the surface of the brick after it gets wet.

But don't accept a substitute—insist on R. H.—the dependable brand.

Write for circular and prices.

The Roessler & Hasslacher Chemical Company

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Cincinnati, O.
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St. Louis, Mo.
Kansas City, Mo.
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Boston, Mass.
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We carry a complete line of high grade chemicals for the clay industry



Light steel rails

We saved the day for the Clay and Coal Operators in War Times by furnishing BUCKEYE MINE RAILS, whenever and wherever needed, and while many other Steel Mills were running exclusively on other material, you could not have operated without us at that time.

Now, in Times of Peace, we ask that you do not forget us, as we can, and will render the same unexcelled service, and furnish the same high quality of material. "Buckeye means best", and BUCKEYE LIGHT STEEL RAILS are better still. All sections from 12 lb. to 40 lb. inclusive always in stock for quick shipment.

Let us have your inquiries, and we will take the chance of developing them into orders on our books.

THE BUCKEYE ROLLING MILL COMPANY
STEUBENVILLE, OHIO

DOES YOUR PROFIT GO UP IN SMOKE?

Canton Rocking and Dumping Grates in your plant mean a large saving in fuel, or a greatly increased production with the same amount of fuel.

By improving combustion, they make a coal saving of at least 10% in comparison with stationary grates. Peak loads can be maintained easily.

If you are interested in cutting down fuel cost and improving combustion, write for Bulletin B, Form 14.

Canton Grate Co.,
1706 Woodland Ave., N. W.
CANTON OHIO

**CANTON GRATES SAVE FUEL
FOR BOILERS FOR KILNS**

Co. and the Evens & Howard Fire Brick Co. were the first to deplete their working forces commensurate with the meager supply of coal on hand. The Mississippi Glass Co. and the Illinois Glass Co. at Alton, Ill., were next in line.

John L. Green, president of the Laclede-Christy company said that only 200 men have been retained. He explained that the company was unable to secure any coal whatever for the kilns, being classed as a non-essential.

P. H. Greenlaw, chairman of the Southwestern Regional Fuel Committee, said that these shutdowns are only the forerunners of a great number of other similar industries, not placed on the priority list. He predicted that thousands of employes in the St. Louis manufacturing district would be thrown out of work this week. Mr. Greenlaw stated that so far as possible the non-essential industries would be allotted sufficient coal to save them from vital losses.

The Evens & Howard Fire Brick Co., of which Cecil Gregg is president, has cut down its force from 1,000 to a few men over a hundred. Mr. Gregg stated that in his opinion there was no near relief in sight from the coal stricture. Only a few men were retained by the glass works at Alton which normally employs a force of 1,700 men, according to Frank Ferguson, the sales manager.

Mr. Gregg, of the Evens & Howard company, said that he believed the coal shortage would result in throwing out of employment more than 10,000 men in the clay products industry of the St. Louis district alone. He was warm in his praise of the St. Louis fuel committee, which he said deserved great credit for its fairness. The committee has been trying to allot the manufacturers sufficient coal to finish brick and tile now in the kilns.

Charges have been made by manufacturers of essential products that non essential plants were permitted by the fuel conservators to hoard coal for use during the emergency. This charge was vigorously denied by clay products manufacturers.

New St. Louis Brick Plant Organized

The new brick and tile plant which has been talked of for some time in St. Louis, Mo., has been organized under the name of the Carlson Brick & Tile Co. and is capitalized at \$30,000. The plant will be equipped with the most modern machinery and construction work will be started soon, under the supervision of F. A. Wheeler. A board of directors and officers will be elected at the next meeting.

Numerous Price Changes in New Jersey

The demand for building materials thruout New Jersey continues strong—and so strong that there is an evidence of scarcity of certain basic products. Even tho the winter season is coming along when diminished activities are expected, there has been no let-up, nor is there any recession in sight. Construction work is going forward rapidly and to make this possible, supplies must be provided. There have been numerous price changes during the month of November, and these, for the most part, to higher levels—still the demand holds, nothing can stop it. Common brick is scarce and is hitting new high marks. At Newark, the prevailing price ranges from \$22.50 to \$24, according to point of delivery; at Paterson, \$23 is the prevailing figure, and a similar quotation is asked at South Jersey points; at New Brunswick, Morristown and points in these districts, dealers are asking \$23 and upwards for good hard common material; Trenton, being a point of manufacture, is still making sales at \$19

and \$20 per thousand, but it is possible with many of the yards closing down and stocks scarce, that a higher quotation will soon prevail. Other burned clay products, including hollow building tile, partition tile, sewer pipe, flue lining, etc., are operating under an active call with appreciable higher prices in a number of instances. Partition tile is being quoted from \$130 to \$140 per thousand, for 3x12x12 and 4x12x12 inch sizes. Face brick continues to hold its own in good fashion and there is a firm demand for desirable selections at prices ranging from \$40 to \$50 per thousand and upwards. Fire brick is coming back into its own, with quotations of \$63, \$68 and \$70 per thousand, delivered, at Newark, Trenton and Paterson, respectively. The manufacturers are busy and for the most part operating under reduced capacities due to labor and fuel situation; the mason material dealers are more than busy, and some have "worries" because stocks as desired are not obtainable, and not likely to be for months to come.

Clay Products Moving Speedily

Fine weather thruout November has made for a fine month of building. There has been no slackening of activities and construction work is progressing at an encouraging pace in New Jersey. The year is bound to round out some exceptional totals—better than for many seasons past, even including prewar times. Even tho prices of building materials are on the upward trend, it is having no effect on the launching of new projects and rapid continuance of existing work. The labor situation in the building trades has righted itself to a nicety, there is little or no difficulty evidenced in this direction, and altho prevailing wage scales are high, very high, there are not enough men to satisfy the demand. All cities in the state of any importance report a good month, and in many instances increased gains have been made. At Newark, Trenton, Paterson, Passaic, Jersey City and points in South Jersey, including the Raritan River section, substantial progress is being evidenced, with housing operations assuming a very important status in the totals. Industrially, as well, the prominent centers are far from backward, and a number of important factory projects have developed. Building material men are busy, and this means that the producers of clay products are having about all they can do to supply the demand, in fact, in many cases, this is impossible, and there is a noticeable shortage of certain burned clay specialties. With a little decrease in building operations, as to be expected during the main winter season, a time may come when it is possible to stock up, but right now—well, to have things moving, materials must move, and this is just what they are doing, and with a speed unanticipated months ago.

10,000 Homes Needed in Newark Community

Newark, N. J., continues to step lively in the matter of new construction work. The month of November shows a fine total for local construction, up to the last week in the month, the aggregate permits amounting to \$792,163, as against a total of \$224,897 during the entire month of last year. Brick and hollow tile are prominent in the list of materials which are operating under very active call, and to afford an idea of just what is going on in this direction, it is interesting to note, as a typical example, that of a gross total of \$229,443 in estimated value of permits during the third week of the month, about one-half, or \$111,050 covered new buildings of brick construction. There is a shortage of practically all types of buildings thruout this community, and it is prophesied by those who know that next year will

Type "B" $\frac{3}{4}$ cu. yd. ERIE Shovel owned by McCrady Bros., Braddock, Pa.



"Very stiff clay, 750 cu. yds. a day"

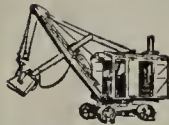
We have loaded, on the average, 750 cu. yds. of very stiff clay per ten-hour day.

We prefer the ERIE to any other shovel we have ever used. In our opinion the ERIE has everything else of her size beat a mile."—McCrady Bros., Braddock, Pa.

The ERIE Shovel is both speedy and reliable.

It is built far stronger than the usual standard of steam-shovel construction.

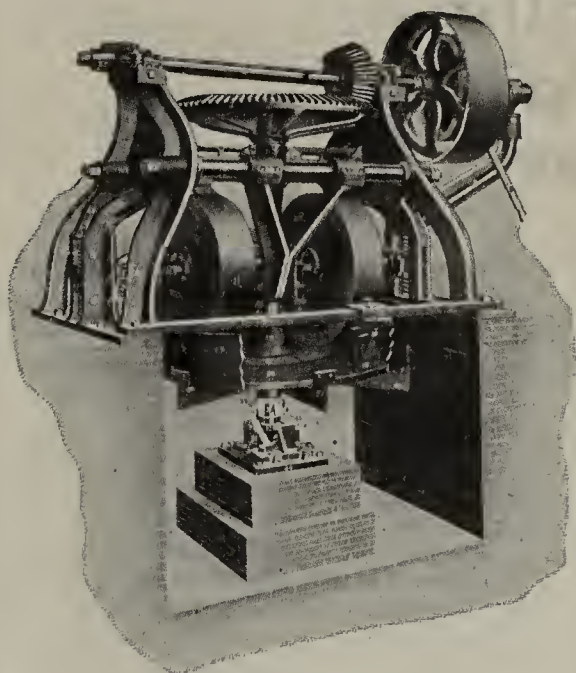
We would like to send you a bulletin showing just what the ERIE Shovel can do. Write for a copy of Bulletin "W."



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Builders of ERIE Steam Shovels and Locomotive Cranes, ERIE Railway-Ditchers, BALL Engines.

ERIE Revolving Shovels



Machines for

Crushing, Grinding, Pulverizing, Empounding, Tempering and Mixing, Elevating and Conveying All Kinds of Materials.

STEAM PRESSES FOR MAKING

Sewer Pipe, Drain Tile, Hollow Blocks, etc.

All of the highest class designing and construction are manufactured by

THE STEVENSON COMPANY

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A Pump is only as serviceable as the valve you put into it

A man must be sure of his valve because no other part of a pump gets greater wear. And nothing will cause it to go 'dead' and become ineffective quicker than a defective valve. The fact that it works out of sight, too, makes it absolutely necessary to put in a pump valve that you know is reliable.

Jenkins Pump Valves have proved their worth by actual performance. It is a reason for their extensive use.

Jenkins Pump Valves are made in several compounds—each compounded to meet the conditions of some particular service.

Know genuine Jenkins Pump Valves, too, by the Jenkins "Diamond Mark."

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Rollin's Barium Carbonate

"We find that the use of Barium not only entirely eliminates the scum caused by sulphates, but deeper and richer colors result than would be expected." So writes a clay products company in Kentucky.

It is obvious to any clay products manufacturer that Barium Carbonate added to the pug mill or to the dry pan will produce brick and tile that command a higher price. It will build up more business than an inferior product which is "off color" and marred by white streaks.

Barium Carbonate makes the salt glaze stick to sewer pipe.

We can show you how the appearance of your ware can be improved, and can give you names of clay concerns who are profiting today by the use of Barium.

Write Us NOW

The Rollin Chemical Co.
(Inc.)

Charleston, W. Va.

be the busiest one in the matter of construction that the municipality has ever experienced. The need for homes is estimated at 10,000, that for new office buildings at least twelve, six theaters, many stores and additional hotel accommodations; in the suburban districts there is an enormous call for new apartments and the large number of big projects of this character now under way in the Oranges and other sections, will not, by any means, fill the gap. Realty promoters who have been holding back for a decrease in the cost of materials are likely to pay a considerable increase even over present totals when they commence operations. The answer is, "Do it Now."

Surrounded by Coal Yet Cannot Get Any

There is a threatened coal shortage in the Raritan River section of New Jersey and the ceramic plants in this district are commencing to view the situation with a little grave concern. There are many important factories of this nature in this district and now devoting operations to distinctly essential work. The grim humor of the local conditions is made all the worse by the fact that the community, being the coal shipping center of many of the largest eastern railroads, is "entirely surrounded by coal" and yet can't get any. Special application has been made by a number of the ceramic plants to the fuel authorities and grants have been issued in different cases covering an advance supply of from one to three weeks. At the Pennsylvania Railroad docks at South Amboy, an average of from 300 to 350 cars of soft coal are transferred to barges and shipped daily. At the Lehigh Valley docks at Perth Amboy, large shipments of chestnut coal have been made during the month to European points.

Raritan River Clay Miners Busy

These are busy days with the clay miners in the Raritan River section. Production is coming along to the maximum point as allowed by labor conditions and there is a strong demand for the well known plastic and other clays from this district. The scarcity of good help has worked particular hardship in many quarters, and it has been impossible to turn an output anything like that required by current orders. Among the busy mines are those of the Bloomfield Clay Co., in the vicinity of Metuchen; these properties are giving employment to about 25 men and could use many times this number of hands. Charles A. Bloomfield, head of the company, has recently returned from a trip to Washington.

December 5 Date of Banquet

The New Jersey Clay Miners and Manufacturers' Association, Perth Amboy, will hold a banquet at the Elks Hall in that city on December 5. The dinner will be followed by a business session, after which a fine entertainment program has been arranged. All of the prominent clay miners and manufacturers of this district are affiliated with this organization and a large attendance is anticipated. L. H. McHose, head of the McHose Clay Co., Perth Amboy, is president of the organization.

Top-Notch Prices by Spring in N. Y. Market

New York and adjacent boroughs are maintaining good totals in building construction. The winter season has had no effect, apparently, of bringing about decreased operations, and strong attention is being riveted on numerous construction projects. Housing work forms the big bulk of activity,

and in Brooklyn there are numerous and vast operations of this character. Industrial work has slackened a little and big work along this line is evidently waiting for a change in the material market, altho there is little indication of any price reduction of basic commodities; in fact, it is quite the other way, and those well informed hold to the opinion that quotations will continue to rise during the winter months with top-notch prices obtaining in the spring. Apartment house work in Brooklyn and the Bronx is a big feature of current operations; the call for housing accommodations of all kinds continues unabated, and there is no difficulty in renting available quarters, but there are few such to be had. Hollow tile dwellings are becoming popular in certain parts of the greater city, while common brick, face brick, and terra cotta are more than holding their own as favorite commodities for permanent buildings. A notable project which has developed during the past month is a new fourteen-story building for the Federal Reserve Bank to be located on Nassau Street, and which will represent an investment well into the millions.

Crippled Soldiers To Study Ceramics

Arrangements have been perfected for the instruction of crippled soldiers in ceramic engineering at the New York State School of Clay Working and Ceramics, Alfred, N. Y., operated in conjunction with the Alfred University at this point. The first quota of men has now arrived and it is proposed to proceed at once with the plan. Dr. Charles A. Prosser, Federal Director of Vocational Education, has been making a careful study of this school and the course of instruction, and has gone so far as to state that the school is one of the best, if not the best of its kind in the country. As is generally known, the college is located in the area of the pottery industries of the state, and since its establishment in 1900 has added materially to its facilities for comprehensive and thoro instruction in ceramic engineering. Many trained men now engaged in neighboring plants received their education at this institution, which is under the direction of Professor Charles F. Binns, formerly of the Royal Porcelain Works, Worcester, England.

Ceramic Tile Manufacturers Active

B. H. Lage, Inc., 484 Greenwich Street, New York, manufacturer of ceramic tile, has increased its capital from \$10,000 to \$50,000. This company has a plant at Menlo Park, near Metuchen, N. J., and specializes in the production of floor tile. The company is enjoying a good business and proposes general expansion in activities.

The American Tile & Marble Co., New York, has been formed with a capital of \$5,000 to manufacture ceramic tile and other affiliated products. M. Wolff, A. G. and J. J. Burno, 344 West Forty-fifth Street, head the company.

The D. H. McLaury Tile Co., Inc., New York, with offices at 103 Park Avenue, is one of the active concerns in this line in the local district. The company specializes in the production of quality tile, and has furnished materials for considerable "deluxe" operations. Current activities are reflected in the important building work now going on, and a good business is experienced.

* * *

Burned clay products of all kinds are operating under strong call in the New York market. Partition tile, drain tile, sewer pipe, flue lining, and kindred products are holding well at existing price levels, with indications that higher figures will be quoted at an early date. Face brick is more than hold-

Perforated Steel Screens

Of Every Description

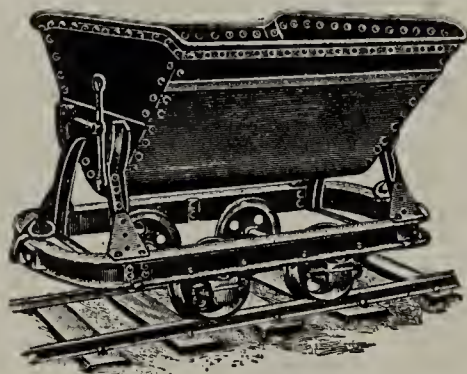
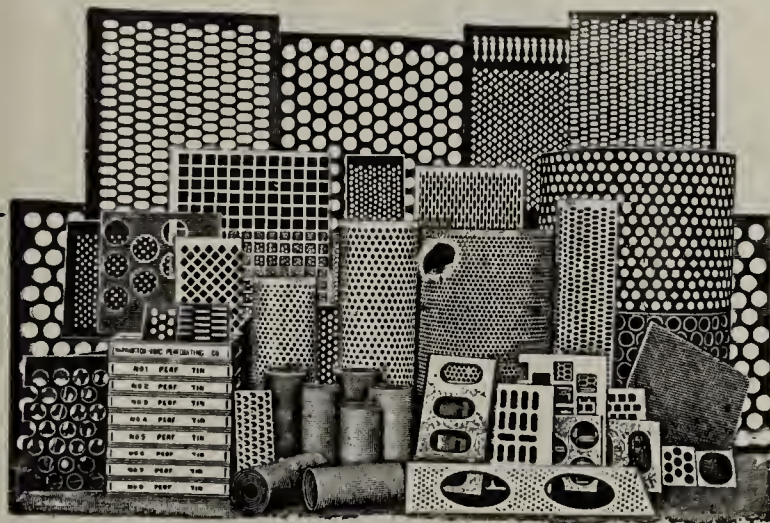
For Screening Clay, Shale, Sand,
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No Other Screens Will Give You Equal Capacity,
Durability and Satisfaction

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Orders must be filled. It's not the price of a car, but its final cost, together with its capacity to stay on the job, that is of importance to you now.

Biehl stock cars are the result of 60 years' constant improvement. Their perfections signify greater achievements for you. Where conditions are extraordinary, Biehl engineers design cars and equipment to meet the most exacting needs.

We specialize on small cars and trucks and on steel car wheels. Your inquiry puts you to no obligation. Ask for a copy of our latest catalog, No. 8c.

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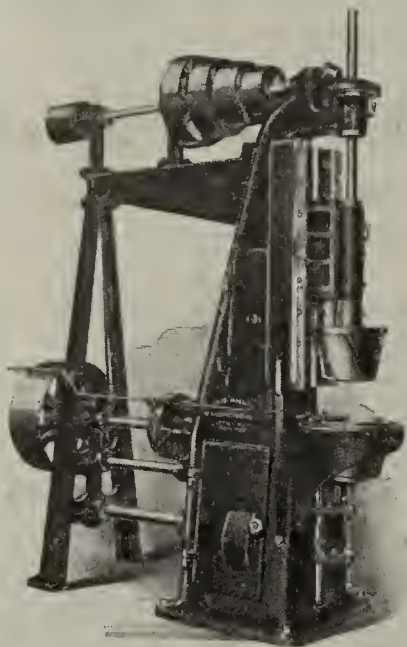
We specialize in steel car wheels



Making Two Profits with One Machine

A contractor set out to buy \$10 worth of brick. He was going to get \$20 for the brick if delivered the same day. But he lost the \$10; and having no credit with the brick manufacturer, was unable to deliver the goods to buyer. Loss, \$10? No, \$20—which amount the contractor would have pocketed had he delivered the goods.

Losses in idle labor means corresponding losses in sales—double losses.



By utilizing your workers' spare time during "off periods," you not only maintain your quota of production, enabling you to make the profit as planned, but you save the cost of idle workmen's time. You make a double profit.

This double profit is assured you with a Baird Pottery Machine. It is simple and economical in operation, costing practically nothing in labor, as any idle workman can operate it. Moulds Flower Pots, Stoneware, Runner Brick, Crucibles, etc. The market for its products is unlimited. Let us explain to you how other plants are profiting by keeping their idle help busy on one or more of these machines. Send along a sample of your clay.

BAIRD MACHINE & MFG. CO.
265-69 Jefferson Avenue E., Detroit, Mich.

Manufacturers of

**Fire Brick
Fire Clay
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Refractories**

THERE are thousands of dealers scattered throughout the country selling one or more of these products.

They can help you to dispose of your accumulating stock. They sell to varied industries.

These building supply dealers can stabilize your supply and demand, not only in this crisis, but during all future unsettled conditions.

Tell them your message now by advertising in **BUILDING SUPPLY NEWS**. Rates and sample copies on request.

Building Supply News
610 Federal St. Chicago

**BUILDING
SUPPLY NEWS**

~Recognized as the Dealers' Own Paper

ing its own, with slight advance in prices; the prevailing figures for selected material range from \$45 to \$48.50 per thousand, including smooth and rough textured varieties. Terra cotta is coming into its own in fine style, and there is a broad demand for this class of material. Fire brick is showing increased strength in matters of call, with price range around \$75, delivered on the job.

Prices Higher, But Plant Rushed

The New England Brick Co.'s plant at Mechanicsville, N. Y., is now running full capacity—the first time for any length of time since before the war—and with proper coal supply will be able to do so for some months. The company reports higher prices for its goods owing to increased wages, cost of materials, shortage of labor and material generally, but is filling orders very well considering the difficulty in obtaining cars.

New Incorporation at Asheville, N. Car.

The Asheville-Shale Brick Co., of Shalesville, N. Car., has been incorporated with a capital of \$150,000, by G. C. Reiniger, M. R. Allen, and James E. Rector, all of Asheville.

Alarming Shortage of Coal in Cleveland

In spite of the edict of Washington that miners return to work pending settlement of disputes between them and coal operators, what appears to be an alarming shortage of coal was making itself felt late in November in the Northern Ohio district. On November 20 an order was issued by the Cleveland Federal Fuel Committee, that means early stopping of industry. This order puts into effect an embargo against all industrial users of coal, and exempts only public utilities, hospitals, homes and manufacturers engaged in food manufacture or preservation of foods. It was the opinion of officials of the Cleveland Chamber of Commerce industrial commission that many factories would be forced to close. At the time the order became effective only plants receiving electric power from outside were likely to keep running and even an early order from Washington cutting off this power was expected. Immediate settlement of the fuel situation, that normal production would start at once, would only mean that it would be thirty days before the effect would be felt among consumers.

Brick producers and distributors in the Cleveland district are not optimistic as to the immediate outlook. At the Cleveland Builders Supply & Brick Co. provisions were being made soon after the order for fuel retrenchment was made public for closing down as the coal supply diminishes, according to H. J. Farr. It was estimated the plants of this company had sufficient fuel to run to about the end of November. The stock of material on hand, however, at the end of that time, was expected to be sufficient to last until December 10. Coal was being redistributed among the plants so that a fairly even production could be maintained.

It is paradoxical that at this time the car situation has improved in the Northern Ohio district, so that there is a larger amount of raw materials available.

Leaders in the brick and clay products industry were of the opinion that early non-employment conditions would be seen as a result of the coal edict, not only among operatives at plants and in yards, but among the building crafts, which could not continue on building operations that would not be supplied with additional materials.

One ray of hope for the industry as a whole is pointed

out by R. E. Lane, traffic manager, the Euclid Builders Supply Co. Many down state plants have their own coal mines, over which the government has no control until the coal is placed on the railroads. It is the belief in Cleveland that if some means can be found to transport this fuel to kilns, these plants can still produce brick and tile and supply the material to the market, tho the prices would be higher because of the increased cost of handling the fuel.

Columbus Operations Quite Active

With warmer weather prevailing, building operations in Columbus, Ohio have been quite active during the past fortnight. This is seen by the record of the city building department and also by the larger number of large building contracts awarded. The largest building contract of the year was awarded when the James Building Co., incorporated to erect a theatre, awarded a contract for approximately \$750,000 for the building of a theater and office building on West Broad St. The building will have a frontage of 104½ feet and depth of 187½ feet. The front portion will be five stories high and arranged into an office building. The theater will seat 3,000. Another large contract amounting to \$400,000 for the erection of a new plant for the John Immel & Sons Co., has been awarded and in addition quite a few smaller buildings for commercial purposes have been let. The building of homes and apartments still continues active as the housing conditions are still unrelieved.

Uses Culls for Unique Residence Effect

Use of culls has been brought into effect at Cleveland, Ohio, in the construction of a brick residence for Warren Bicknell, financier, in the Ambler Heights district of that city. This work will require more than 100,000 brick. Two thirds of the number will be culls. These have been desired by both owner and architect, who aspire for unique effect in wall construction. This material is being furnished by the R. L. Queisser Co., Cleveland, and is being made by the Poston Paving Brick Co., Crawfordsville, Ind. The brick are of tapestry texture, with sulphur glazing, containing many yellow and brown shades. Some of the brick are quite crooked, and these are being combined in a frieze of red sandstone. Chimneys are of the large English type. Another unusual feature in the construction is an arch in the billiard room, in which a small sized tapestry finish Oriental brick, 9x2 is used with white mortar color. Windows are finished with octagon brick of this material. The roof will be finished in dark red tile.

100,000 Capacity Plant Underway Soon

Construction of the first unit in the plant of the Superior Brick Co., at Cleveland, Ohio, is expected to start before the end of the year. Grading to railroad spurs now is being completed, according to J. F. Aten, president of the company. Grading, sewer and side track work are being done by the R. E. Carey Co. A tract about 1,000 feet long and 130 feet wide had to be graded to a depth of 10 to 25 feet. About 13,000 cubic yards were removed. Contracts for buildings will be let early in December. The plant will be located at Jennings and Bradley Roads, and is expected to have a capacity of 100,000 common brick a day. Coal stringency will not affect production, if that condition still exists, in the opinion of Mr. Aten, as oil will be used for fuel. Equipment will be supplied by the Arnold-Creager Co., automatic machines being used.

WATERBURY WIRE ROPE



When strength is the consideration

The approximate breaking stress of 1 inch Waterbury Plow Steel Rope is 38 tons—of average quality new Manila rope, 4 tons. There is no comparison where strength is the chief consideration. And of wire rope, equally beyond comparison in **quality** is Waterbury—laid of the best material, by the latest machinery and with all the skill that comes from long experience. But it is advantageous to make a proper selection of metal and strand and size—even of Waterbury Wire Rope—to secure the best service. Look up the correct data on ropes of all kinds in the 220-page Rope Handbook the Waterbury Company publishes. A copy will be sent free on request.

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Lakewood Double Deck Car No. 167

The Robinson—LAKEWOOD LINE—
Dryer Cars; correctly designed, correctly built, correctly sold.

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Repeat Orders for "Hurricane" Automatic Stove Rooms and Mangle

have followed quickly, after practical tests and demonstrations in many of the largest and best equipped plants, because they

**Speed up drying 50 to 75%;
Improve the quality of ware;
Save labor and are easily handled;
Fire-proof, Steel construction.**



FEED END OF "HURRICANE" AUTOMATIC STOVE ROOM.

Our experience and engineering service may be of benefit to you, in selecting the "Hurricane" Stove Room, Mangle, Drying or Conditioning Machine best suited to your requirements.

Automatic or Truck Systems

The Philadelphia Drying Machinery Co.

Stokley St. above Westmoreland

Philadelphia, Pa.

Success With Rapid Burning Method

One method of increasing production, or rather speeding up production, is announced by the Windsor Brothers Co., with factories at Akron, Ohio. This firm has orders ahead for about 10,000,000 brick. It has its own gas making plant from which it burns nine kilns. Heretofore hard shale brick has been burned in from six to eight days. Since the abnormal demands for material have developed, J. T. Windsor, superintendent of the plant, decided to try burning in four and one-half days using a slightly more intense heat. The brick turned out successful. Success of this rapid burning depends considerably upon the capacity of the plant for drying the green brick.

Coal Strike Causes Shut-downs

The coal strike has had the effect of shutting down several brick manufacturing plants in Ohio. The plant of the Hocking Valley Products Co., at Greendale, has been closed and likewise the plant of the Hanover Brick Co., at Hanover. The Impervious Brick Co. plant at Straitsville is also closed down as well as a hollow tile plant at Logan, operated by the Hocking Valley Brick Co. Quite a few other plants thruout the state have been closed.

Brick Paving Awards

The Ohio Highway Commission has awarded a number of additional road building contracts to be started early next season. Among the jobs was a section of two and a half miles of the Ohio River road in Jefferson County to be paved with brick, and a stretch of over four miles in Pickaway County to be paved with monolithic brick.

The South Using Ohio's Face Brick

One of the best features of the face brick business in Ohio territory is the large number of inquiries and orders from the South. This indicates that building will be active in that section during the winter months.

New Ohio Incorporations

The Stonecreek (Ohio) Brick Co. has been incorporated with a capital of \$170,000 by D. G. Moomaw, W. F. Demuth, F. B. Larimore, James L. Coney and Charles Bear.

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The Hocking Valley Products Co., Columbus, Ohio has secured the contract to furnish about 250,000 face brick for the Mt. Carmel Hospital nurse's home, Columbus.

Philadelphia Prospects Very Bright

Building construction is hitting a normal pace in the Philadelphia district, and the prospects for continued activity during the winter season are exceptionally bright. The last few weeks have shown a noticeable increase in the volume of building permits issued, and housing work has assumed a prominent part in current operations. In this connection, brick is decidedly the popular material, and consequently large demands have ensued from local operators. Industrial work as well is coming along in fine fashion, and a number of important projects of this character, ranging from \$100,000 to \$500,000 in estimated valuation, has developed during the past fortnight; among these may be noted a new four-story brick factory for the American Preserve Co., to cost \$400,000;

a three-story brick plant for the Winner Co., estimated at \$100,000; and a three-story brick warehouse for G. W. Leferts & Co. A notable project which has just developed, and for which plans have been completed, is a nineteen-story office building to be erected by the Atlantic Refining Co. at Broad and Spruce Streets, at a cost of about \$2,500,000. These projects show conclusively that Philadelphia is coming along in the right way, and by the right way is meant the big way.

Business is very good in the mason material line; the manufacturers and dealers are growing busy, and the former a little too busy under present conditions. The call for common brick is strong, and the past fortnight has brought about an advance in price from \$19 to \$20 and \$22 for first grade material, delivered on the job. The face brick market is good, with price levels ranging from \$38 per thousand for red rough textured to \$46.25 for Kittanning smooth gray, f. o. b. cars. Enamel brick is selling for \$126 a thousand, with cartage to site extra. Salt glazed varieties are quoted at \$55 per thousand, f. o. b. cars. There is an active demand for burned clay products of various kinds, with hollow tile taking a lead. This latter material is selling for \$60 and \$94 delivered, in 4x5x12 inch and 5x8x12 inch sizes. Fire brick is holding strong around \$70 per thousand for No. 1 Standard, and the call is increasing for local operations.

Pittsburgh Brick Plants Feel Coal Shortage

In a number of the districts tributary to Pittsburgh, Pa., brickyards are being hampered by a shortage of coal. In some of the highly-unionized districts the miners have not returned to their work, despite the agreement of their national leaders, and an insufficiency of coal is resulting. This is having a tendency to throw back production, which is already behind the demand.

Brick men in the Pittsburgh district are looking with grave apprehension upon the talk of higher coal prices, as one means of settling the coal miners' problems. Higher coal prices will inevitably mean higher brick prices, for manufacturers say they cannot afford to absorb any increase in the price of so vital a factor of their business as coal.

Hazleton Plant Gets Nice Orders

The plant of the Hazleton (Pa.) Brick Co. has been exceedingly busy of late. Manager H. L. Campbell reports that an inquiry for a million brick needed by a Brooklyn contractor had been received recently, and the plant has received orders for 100,000 brick for the new Salvation Army Home, 190,000 brick for the West Hazleton silk mill and also has a big order for a Shenandoah building job. A shed to hold 1,000 brick for future orders has just been completed at the plant.

Three Pennsylvania Firms Consolidate

The Crescent Refractories Co., Curwensville, Pa., has been formed by the merging of the George S. Good Fire Brick Co., Clearfield Clay Working Co. and the Clearfield County Mining Co., with a capital of \$1,155,000. The officers are: A. P. Perley, H. T. Janney, Clarence L. Peaslee and J. B. Graham, Williamsport; J. M. McKinley, Curwensville.

Fire Brick Plant Sold

It is reported that the plant of the Wagner Fire Brick Co., of Archbold, Pa., has been sold to W. R. Foster, of New

BUCYRUS



"If I Had to Discontinue the Use of My Bucyrus Dragline Excavator I Would Prefer to Go Out of Business."

This is what Mr. W. E. Dunwody, President of the Cherokee Brick Co., Macon, Ga., said about his Class 9½ Bucyrus electric dragline excavator in 1913.

In 1919, after six years constant work, he writes: "All that I have said in the past favorable to your machine, I now re-iterate. If there is anything that I have left unsaid, which I could say, I will be glad to add that to my testimonial."

This is but another proof of the fact that Bucyrus shovels and draglines, whether steam, electric or gasoline, stand the punching year in and year out.

Send for Bulletin B.

Here is what Mr. Dunwody said in 1913:
 "As to what my experience has been in the use of the dragline purchased from you, I have this to say:
 "I have been in the brick business twenty-three years.
 "I have manufactured and sold as many as 70,000,000 brick per annum.
 "I have dug clay by hand, and with power excavators.
 "I have been in plants in many states in the Union, and have investigated the different modes of Clay Mining.
 "I have now used the Bucyrus Class 9½ Dragline for three months, and if I had to discontinue its use and go back to operation with an ordinary steam shovel, I would much prefer selling my plant at 50 cents on the dollar and going out of the business.
 "Any man who is digging clay where his clay hole is subject to overflow cannot afford to use anything other than a dragline, and there is no machine, I believe, in the United States which is equal to that turned out by the Bucyrus Company."

BUCYRUS COMPANY
 SOUTH MILWAUKEE, WIS.

New York Chicago Birmingham Minneapolis
 Denver Portland, Ore. San Francisco
 Cleveland Salt Lake City 18

"The S S S Special" Automatic Soft Mud Brick Machine



The "S S S Special" is the ONLY Automatic Soft Mud Brick Machine. It is Brick Machine, Bumper, Dumper, and Sander, all combined in one Great Machine.

**It Saves Labor and
Improves Your Product**

The "S S S Special" means
Improvement Advancement Progress

The Arnold-Creager Co.
New London, Ohio

York, for the sum of \$16,160. Mr. Foster is planning to reopen the plant soon.

✻ ✻ ✻

At a meeting of the Pennsylvania Clay Club in the Fort Pitt Hotel, Pittsburgh, Pa., November 20, figures were submitted which showed that, in the immediate Pittsburgh district, there are only half as many brick available as have been sold.

New Organization for W. Va.

With a capital stock of \$15,000 the Beckley Brick Co., of Beckley, W. Va., has been formed by J. Q. Hutchinson, L. J. Huffman, M. G. Robertson and J. M. Huffman of Beckley. The company plans to commence operations at an early date.

✻ ✻ ✻

The T. A. O'Leary Co., of Pittsburgh, placed with the Morgantown (W. Va.) Brick Co., in the first week of November, an order for 1,600,000 brick to be used in the new plant of the West Virginia Metal Products Co., at Fairmont.

Lovell Plant in Operation by February 1

The Big Horn Basin Clay Products Co., of Lovell, Wyo., has started construction on its plant. The main dryer and machinery room is four-story brick and heavy mill construction. All of the machinery and lumber is on the ground. The concrete foundations are all poured and the work is being rushed so as to have the plant in operation by February 1, 1920. The plant is electrified thruout. Gas is being used as fuel. It is said that the largest gas well in the world is at Lovell. Three wells there each produce over fifty million feet of gas every twenty-four hours.

The Big Horn Basin Clay Products Co. owns twelve acres of land in Lovell on the C., B. & Q. R. R., served with a private siding 4,400 ft. long. The company also owns extensive beds of high grade clay suitable for sewer-pipe and glazed drain tile. Officers of the company are: S. R. Jolly, president; W. Overpack, vice-president and general manager; L. V. Stryker, secretary. Directors are the above and W. B. Snyder, president of the Bank of Lovell; R. E. Richison, manager of the Gas and Electric Co., and C. W. Guthrie.

With Our Canadian Friends

C. B. Lewis and family, Toronto, Ont., have returned home after spending the summer at Weymouth, Dorset, England.

T. H. Graham, of Shale Products, Ltd., Inglewood, Ont., will reopen the plant after making several improvements.

Ryland H. New, president of the Hamilton & Toronto Sewer Pipe Co., Hamilton, is in New York on business.

Andrew Dods, manager of the Ontario Sewer Pipe Co., Mimico, Ont., is at Lake Magog, Quebec, hunting.

D. A. Lochrie, J. Morrison and C. A. Millar, Toronto, are in the north country looking for their quota of deer. These clayworking nimrods are well known shots who usually get what they go after.

The Dominion Sewer Pipe & Clay Industries, Ltd., Swansea, Ont., has greatly increased its business, and production this year will be more than double that of last year. During the past year considerable improvement has been made to the plants. Shortage of labor prevents further immediate expansion.

Conditions in the clay products business in Canada are generally good altho the shortage of labor is a great factor which seriously affects production. Prices are good and range from \$20 to \$22 for common brick, and from \$24 to \$26 for face brick. The brick concerns which increased their kiln capacity in anticipation of a big demand this summer are congratulating themselves on their foresight.

Reports received show that the brick plants at Quebec are very busy. The pottery at Belleville is rushed and the brick plant at Brantford is working to capacity. At Kitchener the brick and tile plants are all busy. This condition also exists at Stratford, London and Chatham.

The Sun Brick Co., Toronto, will increase its kiln capacity.

The Booth Brick Co., Islington, Ont., has completed a railroad kiln.

Edward Frid will represent the Sun Brick Co., Toronto, in Hamilton, Ont.

For the ten months of this year, 251 brick houses were erected in Toronto, Ont. Other dwellings numbered 81 for the same period.

The Citadel Brick & Paving Block Co. Ltd., 320 St. Paul St. Quebec, are putting up four new round down-draft kilns of the latest type at their plant at Bois Chatel near Montmorency Falls, and twelve additional dryer tunnels. When this new plant, costing \$75,000, is completed, the company will have a daily output of 25,000 face brick and 75,000 common brick.

The pottery business of John Cranston & Sons, Hamilton, Ont. was sold recently and it is understood that the new owners are planning to use it for other purposes. This discontinues a pottery firm which was established thirty years ago. Since the death of the late John Cranston and his son, the business has been in charge of the son-in-law, Mr. Beer.

The plant of the Superior Brick Co. at Fort Williams, Ont., will be sold on account of defaulting the payment of \$10,000 bonds.

Jack Miner, tile manufacturer at Kingsville, Ont., has been in Northern Ontario on a hunting trip.

Revising Toronto's Building Code

W. W. Pearse, city architect, Toronto, has accepted the position of general manager of the Toronto Board of Education. Mr. Pearse has been a contributor to the discussion at many brick conventions and his statements have been accepted as authoritative. Since becoming city architect in 1914 he has been busy revising the existing building codes and rewriting them. One of Mr. Pearse's ambitions has been to place brickwork construction on the same scientific basis as steel and thus save a great deal of money for builders and contractors as well as aiding the manufacturers of brick. With this in view he made tests of the products of Toronto's brick plants, making many elaborate investigations and experiments.

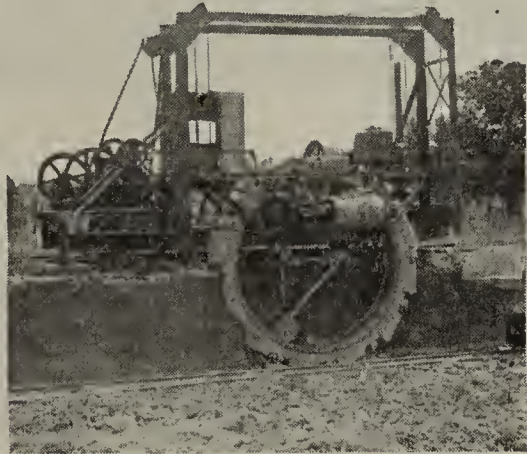
The new code which is now being discussed by the various engineering societies, builders' exchanges and manufacturers before being adopted by the Toronto City Council, gives a new allowable load in compression upon walls, doors, pilasters, buttresses and other supports as follows:

Hard brick and sand-lime laid in lime mortar, 98 lbs. per sq. in.

Buckeye

Traction Digger

As we couldn't better the perfect mixing, we improved the Buckeye construction to handle increased capacity and to lower your digging costs.



You want these Advantages

The Buckeye Digger costs less in first cost than any other types of traction diggers.

Operating and maintenance costs are surprisingly low. It operates in pits that are too soft for heavier type machines.

It gives a better mix than any other practical clay digging machine.

That these advantages are of practical benefit to clay manufacturers is proved by the fact that more and more Buckeye Traction Diggers are being used in clay and shale pits than ever before.

Here are a few users:

Crossman Company
New York, N. Y.

Haeger Brick & Tile Co.
Aurora, Ill.

Edgerton Clay Products Co.
Edgerton, Ind.

May we send you data? Ask for a copy of "Digging Clay for Profit."

The Buckeye Traction Ditcher Co.

Findlay, Ohio



Running out doors— every day—for 28 years

That's the service record of this 12-inch double **"Camel Hair"** belt. Originally developing 75 horsepower, as the plant grew the belt bore an increasing load without faltering, until it was transmitting 130 horsepower when it was finally replaced—*still in good condition*—by another **"Camel Hair"** belt, wider because more power was needed.

Summer sun and rain, winter sleet and snow caused no interruption to its constant efficiency despite the lack of protection. From what other belting could you knock off icicles, shovel off a night's fall of snow, and then have it run as efficiently as though it had always been carefully cared for, and even deliver more power than it was planned to carry?

But the durability and high power-transmitting qualities of **"Camel Hair"** belting are well known all over the world. Its performance under these unusual and severe conditions is only an example of the economy in the *right belt for the particular drive*. In the Rossendale-Reddaway line of fabric belts for every service, the right belt for the particular drive is only a matter of proper selection. They all have the high quality of material and workmanship which distinguish belts made by

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**The Rossendale Reddaway
Belting & Hose Co.**

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Newark, New Jersey

Export Department, 26 Cortlandt Street, New York City

2010-R

Hard brick and sand-lime laid in lime and cement mortar, 154 lbs. per sq. in.

Hard brick and sand-lime laid in cement mortar, 210 lbs. per sq. in.

Pressed brick laid in lime mortar, 140 lbs. per sq. in.

Pressed brick laid in lime and cement mortar, 196 lbs. per sq. in.

Pressed brick laid in cement mortar, 252 lbs. per sq. in.

The materials specified in this table in order to obtain the working values therein assigned them, shall have an ultimate compressive strength per square inch of effective sectional area of at least the following:

Hard brick 3300 lbs.

Sand-lime brick 3500 lbs.

Pressed brick 4000 lbs.

Graham Assumes Management of Alsip Plant

R. G. Graham, who has returned from the front after four years' service, has taken over the management of the Alsip Brick, Tile & Lumber Co., Ltd., of Winnipeg, Man., succeeding C. M. Thompson.

New \$40,000 Plant for Buffalo

The Buffalo Porcelain Enameling Corporation, Buffalo, N. Y., recently organized, has acquired property on Elmwood Avenue, near Hertel Avenue, comprising about two acres of land, for the construction of a new plant for the production of porcelain and vitreous enamels. The company has given a consideration of about \$20,000 for the site, and the new plant is estimated to cost around \$40,000. It will be equipped to give employment to approximately 50 hands for initial operations, and it is planned to practically double this capacity during the coming year. Edward Kenner, Jr., S. S. Jewett, and Fred H. Williams are interested in the company.

Will Spend \$50,000 to Improve Plant

Extensive improvements are being made to the plant of the Brunt Tile & Porcelain Co., which is located at Chase-land, a short distance north of Columbus, Ohio. A contract has been awarded for the erection of a \$30,000 building, 65 by 150 feet which will be occupied as offices, packing rooms, warehouse and stock rooms. The structure will have brick walls, composition roof and factory windows. The work of construction has started and in the meantime the architect is busy figuring on an additional building to house the stock room and a garage for a dozen cars. Three new kilns are also being erected and several of the former kilns are being remodeled and improved. When completed the improvements will mean the spending of about \$50,000.

Addition Being Built to Maddock Pottery

The Maddock Pottery Co., Trenton, N. J., manufacturer of hotel chinaware, has broken ground for the construction of a large addition to its plant at Third and Landing Streets, to approximately double the present output. Three new brick structures will be erected, comprising a three-story and basement building, 60x120 feet, a two-story and basement structure, 50x120 feet, and a new kiln building, 60x160 feet. Considerable new machinery and equipment will be installed, with the entire project estimated to cost about \$150,000. J. Osborne Hunt, 114 North Montgomery Street, Trenton, is architect. The company's business has been increasing rapidly, and orders are on hand for deliveries well in advance of current production. With the encouraging

outlook for a continuance of fine trade, it is proposed to rush the new buildings to completion, and have ready for operation at the earliest possible date.

Instructing Polish Employes in English

An English class has been organized at the plant of the Thomas Maddock's Sons Co., Trenton, N. J., for the instruction of Polish employes. The first meeting was held on November 18, in the club room at the works, for the purpose of perfecting the organization. A number of prominent local people, who are interested in the movement, were present, including William L. Ward, supervisor of the Trenton Evening School. The class membership is open not only to employes at the plant, but to others of all nationalities. It is planned to hold sessions on Tuesday and Thursday nights. Joseph Hoffman will be in charge.

Modeling New Designs for Export Trade

The Pacific Porcelain Ware Co., Richmond, Cal., is experiencing a steady demand for its vitreous china plumbing fixtures. The company has recently made additions to its plant and is now working on additional designs and types of products being modeled particularly for export trade. R. H. Roemer is in charge of the Southern California territory of this company and H. L. Frank of Oregon and Washington territory. W. A. Potter is factory manager and L. J. Waldear his assistant.

Bauer Plant Building Addition

J. A. Bauer Pottery Co., Los Angeles, Cal., is planning to build an addition to its factory 60 by 40 ft., two story, and to build a new four room office. They have installed motors to replace the boiler and engine in the pottery. There has been a 50 per cent. increase in the number of men employed on the plant this year. J. A. Bauer, owner, says that business has been extra good. He is looking for improved stoneware kilns at the present time.



It is rather remarkable the number of overtures that are being made to pottery manufacturers in the eastern Ohio district to locate elsewhere. Commercial associations in southern and western towns and cities have been rather insistent of late that an ear be given to question of removal. The most recent overture for the removal of a pottery plant from East Liverpool came from St. Louis interests, while another came from a Canadian quarter. Some of these offerings are admitted to be attractive. Cheaper fuel has been guaranteed in a number of the letters which have been received, while the matter of land is optional as to size, and this gratis.



The Pittsburgh China Co., Greensburg, Pa., has commenced the construction of its large local plant for the manufacture of high-grade chinaware. The plant will be equipped to give employment to about 400 operatives, and with machinery is estimated to cost about \$600,000. In connection with the new plant a housing development has been inaugurated, with a first unit of forty houses to cost from \$4,000 to \$7,000 each.



The Electric Porcelain Co., Trenton, N. J., has filed plans for the construction of an addition to its plant on New York Avenue.



A Pulsometer "fades" a two-gun man—

—when it comes to "double action." It gets double duty out of the steam that goes into it—first it forces the water out of the cylinders, then condenses, forming a vacuum which draws in a new supply.

In fact, a Pulsometer operates with about half the steam most pumps require—and less steam means less fuel. (Some Pulsometers are even working on exhaust steam from other sources.)

Added to this fuel economy is another money-saving feature: A Pulsometer doesn't need oil—it works without lubrication because there are no sliding parts, pistons, glands, stuffing boxes, connecting rods, cams, flywheels or cranks—nothing in its makeup to cause friction at any point.

No pampering, no petting—a Pulsometer works without attention—just take it where there is some water to be raised—rig it up to anything, drop the intake in the water, open the steam line and it pumps and throws water as long as there is any in sight—water that is 40% sand, mud, grit or gravel, too.

If the problem is water on the job—a PULSOMETER is the answer.

Our catalog tells about it.

PULSOMETER STEAM PUMP CO.

Executive Offices, 224 West 42nd Street
New York City

Agencies in Following Cities:

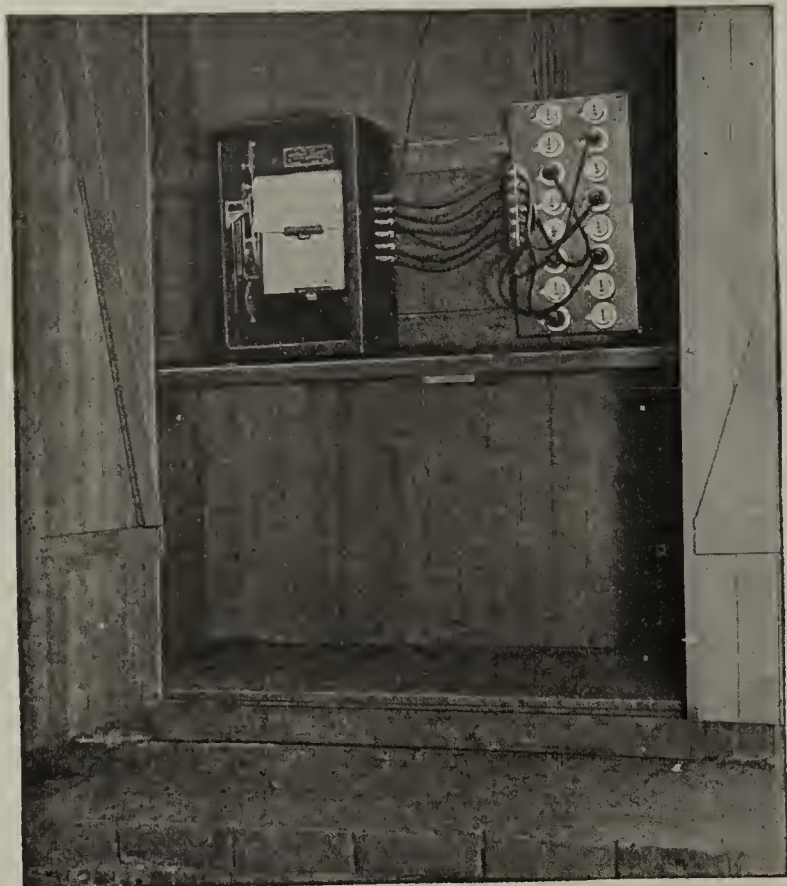
Harold L. Bond Company,
383 Atlantic Ave.....BOSTON
Henry H. Meyer Company,
110 S. Howard St.....BALTIMORE
Liberty Steel Products Co.,
McCormick Building.....CHICAGO
Beckwith Machinery Co.,
1227 West 9th St.....CLEVELAND
Queen City Supply Company,
S. W. Cor. Elm and Pearl Sts.....
.....CINCINNATI
H. A. Paine,
119 Main St.....HOUSTON, TEX.
J. L. Welborn.....HATTIESBURG, MISS.
Miller Supply Co.....HUNTINGTON, W. VA.
Edelen & Co.,
235 Commercial Trust Bldg.....
.....PHILADELPHIA

Beckwith Machinery Co.,
108 Parkway, N. S.....PITTSBURGH
W. L. Sullivan Machinery Co.,
.....PITTSBURG, KAN.
F. H. Hopkins Company.....MONTREAL
Kern-Hunter, Inc.,
208 Wells St.....MILWAUKEE
Wm. H. Ziegler,
423 South Fifth St.....MINNEAPOLIS
Berow Machinery Co.,
220 West 42nd St.....NEW YORK CITY
Harron, Rickard & McCone,
139 Townsend St.....SAN FRANCISCO
Shippers Commercial Corp'n,
L. C. Smith Bldg.....SEATTLE
Kelly Powell Limited,
.....WINNIPEG, CANADA

2019-M

PULSOMETER

STEAM PUMP



This THWING PYROMETER

*makes six records from any six
of sixteen kilns in a brick plant.*

These records are clear and strictly accurate and are printed in ink on a single straight chart—a great advantage.

Comparison is thus made easy and all records are quickly available for reference, which means that ideal heat conditions can be readily reproduced at any time.

It also saves the cost of installing separate instruments for each heat source.

Thwing Pyrometers are not only accurate, but also durable and sustain their reliability over extended periods.

In a large number of brick and clay plants the use of Thwing Pyrometers is saving fuel and labor, increasing output and improving product.

Ask for our engineering advice, or at least write for a copy of our book on Pyrometers.

THWING INSTRUMENT CO.

3336 Lancaster Ave. Philadelphia, Pa.

68

The small pottery plant at Rogers in Columbiana County, which has been inactive for over a year, is soon to be placed on the active list. The plant is owned by Pittsburgh, Pa., interests, and it is reported a deal is now pending for the sale of the property.



Clays and Shales of Minnesota

The increasing use of clay products in the building trades gives interest to all deposits of clay or shale that promise to yield material which can be made into brick, tile, sewer pipe, or drain tile, and this interest is made greater by the increasing cost of lumber and by the obvious necessity of reducing our enormous fire loss by constructing fireproof buildings.

Deposits of clay, shale and slate are abundant and widespread, and many communities are paying transportation charges on large quantities of them and of their products, which are brought from afar while deposits that will yield products equally good lie close at hand. Only detailed examinations and tests can make known the quantity and quality of the material of these deposits, and such examinations should form a part of a countrywide detailed survey made to determine the location, quantity and value of our unutilized mineral wealth.

Such a survey for clays and shales has been made of the State of Minnesota, and its results are given in full in a report just published by the United States Geological Survey, Department of the Interior, as Bulletin 678, which is entitled "Clays and Shales of Minnesota." The work was done by Frank F. Grout, the author of the report, and by other members of the Minnesota Geological Survey, in cooperation with the Federal Geological Survey. The bulletin describes the distribution, origin, properties and adaptability of the clays and shales of the state, classifies them by uses, origin and properties, and gives the results of chemical analyses and physical tests. Attempts were made to test all the more extensive deposits sufficiently to show the purposes to which they are best adapted. The geologic formations of the state and their clay deposits are briefly described, the general distribution of the several types of clay is shown, and the detailed distribution of the clays of the state is described by counties.

The specific objects of the work done were to determine the supply of brick clay available for every town of a thousand or more inhabitants in the state and for every county, to ascertain the extent of certain deposits that are now utilized at only a few places, to find new deposits, and to determine the qualities of the clays in the deposits and of certain mixtures in order to find whether it is possible to make from them refractory wares, pottery, paving brick, and other high-grade products.

The broader problems of ceramics are considered only incidentally, but some of the conclusions of the American Ceramic Society, of the United States Bureau of Standards and of certain state geological surveys are briefly reviewed in order that they may be more readily available for technical and commercial use.

The bulletin contains a map of Minnesota showing the distribution of clays, a general geologic section of the state, and numerous county maps, views, diagrams and local graphic sections. Also a section on the technology of the clay by E. K. Soper, describing the methods used in prospecting for clay, the location and operation of clay plants, the preparation of the clay for burning, and the kilns and fuels used.

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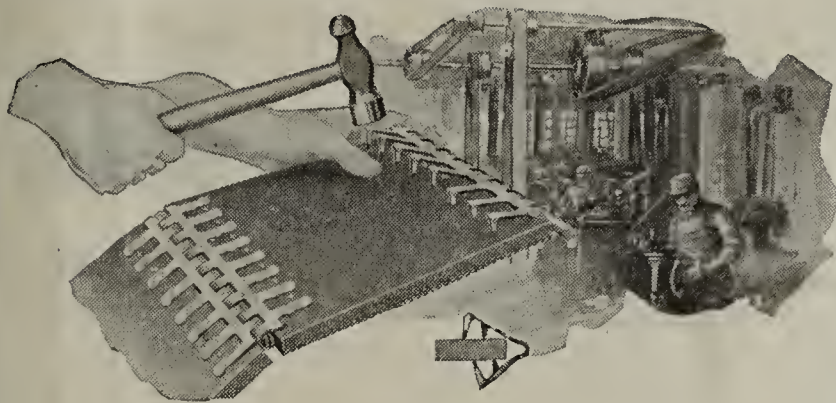
movement designed to promote home building and home owning. The clayworker is certainly not interested in the growing consumption of luxuries. Do you know whether loans upon real estate are as attractive as other forms of investment? If you do not, secure a copy of Senate Bills 2094 and 2492 and House Bills 8080 and 7597. Read and study them.

INTERESTING LEGISLATION

Senate bill 2094 and House bill 8080, are similar in their purpose. They are designed to encourage building of homes by providing for exemption from taxation of the income on mortgages on real estate. Such exemption however, is not to cover interest in excess of mortgage or otherwise, solely by real estate.

The text of Senate bill 2492 and House bill 7592 is practically the same and their aim is identical. The purpose of these bills is to "encourage home ownership and to stimulate the buying and building of homes; to create a standard form of investment based on building association mortgages; to create government depositories and financial agents for the United States; Furnish a market for Government bonds; and for other purposes."

The Act would create a system of Federal Building Loan Banks operating under the general supervision of a superintendent in the Department of the Treasury. It is provided that each such bank shall begin business with a paid-in cash capital of not less than one hundred thousand dollars in shares of one thousand dollars each. Only building associations may purchase or hold stock of such banks. Each bank shall be managed by seven directors, selected by the member associations composing the bank. It is provided that such banks, when designated for the purpose by the Secretary of the Treasury, shall be depositories of public money, except receipts from customs, under such regulations as may be prescribed by the Secretary. No government funds so deposited shall be invested in building loan bonds.



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The LETTER BOX

A Place Wherein Letters
That Have General Interest
Are Published and
Commented Upon

Cites High Record in Laying Pavers

In the November 18 issue of *Brick and Clay Record* there was published an item under the heading of "Establishes High Record for Laying Brick," in which it was claimed a record had been made by Contractor R. J. McFadden, of Moundville, W. Va., by laying 44,800 brick in two consecutive working days, the high run being the second day with a total of 24,640. This work was done by Henry Murray, a layer employed by Mr. McFadden.

Since the publication of the above item, we have received a letter from R. E. Gray, of Ashtabula, Ohio, who states that T. P. Fitzgerald, a highway contractor of that city, established a greater record when he built the Ashtabula-Conneaut section of the Buffalo-Cleveland main market road last summer. Twelve miles of monolithic brick road were laid in ninety-two days, the daily average of wire-cut lug brick laid being 49,806 for two gangs, or 24,903 brick per gang. The following information, according to Mr. Gray, is the correct data as secured from Mr. Fitzgerald's records and pay-rolls:

"This information is on twelve miles of monolithic brick road, sixteen feet wide, all turns or bends elevated and widened to 20, 22 and 24 feet, the last one thousand feet on the east end being forty feet wide. The entire pavement contains slightly over 4,582,000 brick and was laid in ninety-two working days. Working from a central point east and west two gangs laid a daily average of 49,806 brick per day or an average of 24,903 for each gang. Wire-cut lug brick were used, and the working day was ten hours.

"The layers' daily work was carefully measured and computed each day, their wages being figured on number of square yards laid. Figuring was done on the basis of forty brick to the square yard.

"Mr. Fitzgerald's records show 21,320 brick as the minimum number laid by one man working thru the full day—34,750 the maximum which is an average of almost fifty-eight brick per minute. High daily one man runs for full working day were made as follows: 24,840, 25,360, 26,080, 26,320, 27,120, 30,600, 33,180 and 34,750.

"The one man record for two consecutive days was 26,160 and 27,120, a total of 53,280 for the two days.

"The largest amount of work for one day was 1,089 feet of completed pavement, which contained 77,440 brick. This was made by two gangs working at each end and relief brick layers were used from time to time during the day. The last day 676 feet of complete road was finished with two layers working together on the same end. This is equivalent to 48,070 brick. On relief work were layers who changed off at noon hour, one man working from 6:30 to 11:30 a. m.—five hours, and laying 16,512 brick, or 61.7 brick per minute. The afternoon man laid 18,116 brick."

✻ ✻ ✻

Many eastern Ohio pottery manufacturers are enlarging and improving their sample rooms. New furniture and fixtures are being installed, and in several instances these rooms resemble a cozy library more than a place of commercialism. The display of dinnerware in these sample rooms in January will be more attractive than ever. New shapes are to be viewed at the time, while on older shapes many new treatments are to be shown.

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all depart-ments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups," to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit sub-scriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

MR. BURLESON, HIS ANNUAL REPORT, THE POST OFFICE DEPARTMENT AND THE CLAY PRODUCTS INDUSTRY IN GENERAL

POSTMASTER GENERAL A. S. Burleson has just made his annual report for the fiscal year ending June 30, 1919. His report shows a surplus of \$2,342,851.96.

No doubt Mr. Burleson feels very proud of this apparently favorable showing, and if he were operating any other class of business except the United States Postal Service, he would have just cause for congratulation. Any man that can operate a business for twelve months without profiteering and show a net income of more than two million dollars, is most certainly a candidate for profuse praise and hearty commendation.

POST OFFICE NOT A PRIVATE ENTERPRISE

However, as has already been intimated, Mr. Burleson is not operating a private business but one that is distinctly public in nature. It is the government post office department. Unless our information fails us, we cannot for the life of us remember where any postmaster general was ever given instructions to make a profit on the post office department. We have thought right along that this important branch of the government was instituted to function solely for the benefit of the public. If this be the case, in view of the more than two million dollar surplus it would seem only reasonable and just that postage rates be revised downward sufficiently to distribute among the public the accrued earnings of the post office department.

Under ordinary circumstances, one would have great difficulty to disprove the reasonableness of such a course in view of the surplus earnings of the post office department. But let us examine the personnel of the post office de-

partment, its machinery and operation, to learn the secret of Mr. Burleson's financial success, for if Mr. Burleson is really as successful as he appears to be, there are many of us who would be more than glad to learn what we could from his methods of management. Less prominent and perhaps less able men have been interviewed, cross-examined and interrogated times beyond number to learn if possible, the secret of even their moderate success, but here is a man whose ability has netted "Uncle Sam" more than two million dollars in the brief period of one year. Surely an investigation of his way of handling his business ought to prove unusually interesting.

WHAT ONE INVESTIGATOR LEARNED

The other day a reporter for a well known Cleveland daily newspaper secured a position in the Cleveland post office. His "boss," the managing editor, had instructed him to do so. Several complaints had reached this Cleveland newspaper from "Sixth City" merchants with regard to the postal service which they were receiving, and in order to learn if their complaints were just and reasonable, the managing editor of the particular newspaper in question had instructed one of his reporters to work in the post office a week and report his experiences at the end thereof.

Not wishing to bore our readers with the details of this young man's experiences, let it be sufficient to say that he found working conditions unsanitary and disagreeable. There were not enough lockers in which the employes could hang their surplus clothing while they worked. The lunch room was no better than a hog pen. The pay was low and those who had worked for some years in the post office were also endeavoring to hold down a night job in order to make both ends meet. These long hours of service and lack of sleep soon drove the majority out of the post office service to seek positions in other lines, which are numerous and far more remunerative than in the post office department. This has resulted

in the management being compelled to hire help of inferior ability and low efficiency. Since it takes considerable skill to sort and handle mail, the inefficient help naturally delayed the handling of mail thru the post office, resulting in confusion and congestion. The men who had been accustomed to operate the automatic sorting machines had to quit because of the low wages paid, therefore, inexperienced men were operating these machines. As a consequence the machines often were overloaded, becoming jammed, and had to be frequently stopped in order to adjust the machine. The reporter stated that more than once he saw letters torn to shreds in the sorting machines.

The condition was such that the force was kept busy disposing of the first-class mail. Other classes of postal matter received attention after the first-class mail. There were large quantities of third-class matter, it was stated, which did not leave the post office until a week following its receipt.

This is not an isolated instance of governmental inefficiency. The same condition is said to prevail in nearly every large city to a greater or less degree.

CARRIERS WAITING FOR PENSION BILL

While Mr. Burleson had been making a report showing a surplus of more than two million dollars, letter carriers who have been in service forty and fifty years are still waiting for the passage of a pension bill by Congress. The writer knows of a case of a letter carrier who had been in the service close to fifty years and who became ill recently and owing to a lack of pension provisions, this veteran and faithful employe of "Uncle Sam," if not in actual want, is bordering closely thereupon.

Instead of reporting a surplus of more than two million dollars, this money should have been spent to provide a decent living wage for the post office employes, and if this money was not enough (and it probably would not be) to relieve the situation, Congress should have been called upon long since to provide the balance. Business men of this country are vitally interested in the efficiency of the post office department. The commer-

cial life of the country depends upon the promptness and dispatch with which all classes of mail are handled. The industrial texture of this country is now so complex and far reaching that even a slight delay will hold up operations all along the line, involving a loss of millions of dollars that might have been added to the wealth of the nation.

YOU ARE INTERESTED

The clay products industry is interested in the efficiency of the post office department because it has considerable occasion to use the mails. Every citizen, as a matter of fact, ought to be concerned.

But, Mr. Burleson wants to make a record for himself. He wants to make a good showing for his administration in the post office department. Strange as it may seem, unless we are incorrectly informed, he is the first postmaster general who has ever taken such a stand. It is hard to realize just what course of reason Mr. Burleson has followed in arriving at his conclusion. He may think that he is helping the Wilson administration, but a simple revelation of facts, we believe, will change his attitude into a boomerang.

* * *

COAL STRIKE ENDS

SINCE the last issue of *Brick and Clay Record*, the strike of bituminous coal miners has been brought to a conclusion. On December 11 at Indianapolis, the representatives of the miners, headed by Acting-President Lewis and Secretary Green, accepted President Wilson's peace offer of an immediate increase of fourteen per cent. in wages with the appointment of a commission to report within sixty days the result of its findings as to whether or not the miners are entitled to a further increase, which increase it is understood will be added to the cost of coal to the consuming public.

NO ONE SATISFIED

It is obvious that no one will be satisfied with the terms of the settlement. Certainly the rank and file of the miners will not. They

(Continued on Page 1179)

A. F. B. A. SHOWS POWER



JOHN H. BLACK.

*Record Delegation of Face
Brick Men Attends Sessions
Where the Enormity of the
Association's Activities and
Benefits Astound All—
Membership Since February
Meeting More Than Doubled
—Ideal Weather Prevailed*

BY FAR the largest gathering of business men interested in the manufacture and sale of face building brick, that ever convened under one roof, took place on December 2, 3 and 4, at the French Lick Springs Hotel, French Lick, Ind. Various estimates were made of the number attending. Jno. M. Stoner, presiding officer at the joint session of the dealers and manufacturers, stated that there were more than three hundred men in the room. This, of course, does not include the large number of ladies who were present at the convention but who did not take part in the proceedings. If these were counted, a conservative estimate would place the number that came to French Lick because of the annual meetings of the American Face Brick Association and the Face Brick Dealers' Association of America, at close to four hundred. This corroborates the testimony of hotel attaches who said that there were about five hundred people in the hotel at the convention, leaving about one hundred for other guests, which is just about right.

MORE THAN DOUBLES MEMBERSHIP

No more eloquent evidence nor wonderful witness to the marvelous growth of the American Face Brick Association could be had than that which was afforded by the opening session of the convention on Tuesday afternoon, December 2, at 2:30 o'clock. Every part of the procedure from the calling of the roll, which showed an increase of one hundred and seventeen per cent. in membership, to the announcements at the close of the session pertaining to hearings of individual cases in connection with the current freight rate fight, revealed the existence of a highly organized, forceful and efficient trade body. To sum it up in a few words, the American Face Brick Association "has arrived."

The reading of the minutes of the last annual meeting was

dispensed with upon motion of J. M. Adams, of the Iron-clay Brick Co., Columbus, Ohio.

F. W. Butterworth, of the Western Brick Co., Danville, Ill., and president of the association during 1919, arose to read his annual message to the membership. This address has been deemed so important that it is reproduced in full on another page of this issue, so no comment need be given it here. Let it be said, however, that Mr. Butterworth's words were received with loud approbation and continued applause.

SECRETARY HOLLOWELL MAKES ANNUAL REPORT

R. D. T. Hollowell, secretary of the association, then read his annual report which is as follows:

"Our last annual meeting was held somewhat less than ten months ago. In that brief period, the association has thrown aside its war time shackles and has assumed a more important place in the industry than ever before.

"By order of the board of directors, association headquarters were moved, during the latter part of April, from Washington to Chicago. This change has been, and will un-



Francis B. James, Representing Allied Brick and Tile Interests in Freight Case at Washington.

nd CLASS at FRENCH LICK

MESSAGE TO FACE BRICK MANUFACTURERS

Under date of December 8, John H. Black, president of the American Face Brick Association, sent a letter to the membership of the association which incorporated the following:

"In acknowledging my election to the presidency of this association, I beg to express my appreciation of the honor, and I promise you my utmost endeavors to continue the work so successfully carried on by Mr. Butterworth.

"The principal objectives for 1920, as they appear to me, are:

"First: The continuation and development of the splendid spirit of COOPERATION, so marked in our association work, for out of this spirit grows the UNSELFISH desire to help one another. The firm resolve to do only those things in our daily business relations which will tend to further ELEVATE the WHOLE plane of our industry, constantly bearing in mind the most complete service due our final customer, the ultimate consumer. If our first thought can ONLY be concerned for the future of our industry, the greatest measure of satisfactory prosperity shall be our reward.

"Second: The successful development of the program of publicity in which an immense amount of work has been done in the gathering together and preparation of material. The determination of every one to cheerfully and promptly do his share when called upon, so that we may take our full benefit of the opportunities thereby offered and with due regard for the rights of others.

"Finally: Let every member feel the urgent need of inducing those neighbors who have not seen the light, to join in the work of this association, for the measure of success lies in EXACT proportion to its STRENGTH.

"Our watchword for 1920 is 'Cooperation in every legal way.'

"The association expects every member to do his part."

doubtedly continue to be, advantageous both to the members and employes of the association, on account of its natural facilities and its central location.

"The drive, which was being conducted at the last meeting to obtain the support of approximately 80 per cent. of the industry, for a campaign of publicity for face brick, was successfully concluded during the month of April. Accordingly, at a meeting of the board of directors on May 22, the articles of agreement were put into effect, and first payments of monetary obligations became due September 25.

SET SIX PRINCIPAL OBJECTIVES

"The association's year has been characterized by top speed energy. Were we to merely enumerate the many important things which have been accomplished, the time limit for this report would be exceeded. The board of directors, at its meeting on May 22 last, adopted six clearly stated principal objectives for the association's efforts, and with your permission, I will limit this general report to brief remarks relative to each.

"First—EXTENSION AND RETENTION OF MEMBERSHIP.

"The present membership list of this association numbers 98, an increase in the number of members, of 117 per cent. The territory covered by the association has become considerably enlarged; the major portion of the production of the south now being included as well as many additional plants in the far West and Southwest. Thruout the states having large face brick productions, there have been gratifying responses from manufacturers not previously affiliated. There are very few manufacturers of considerable importance who are not now members of the association, and we have good reason to believe that during the next twelve

months we will be able to obtain the support of a large percentage of the production which is now outside of this organization.

DESIRES FACE BRICK MEN TO AID MEMBERSHIP

"We believe that every present member thoroly realizes the importance of the relation between the association's major objectives and the welfare of his own individual interests; also, that by securing the support of additional production, we can hope for proportionately better results. We, therefore, at this time, call upon our members again to renew their enthusiastic efforts to aid the secretary in enlarging the association's membership, thereby making a more complete unification of our attack upon the large problems which are before us.

"Second—DISTRIBUTION OF MARKET REPORTS.

"Special, and we believe successful, efforts have been made in obtaining fuller and more accurate reports of this nature than have heretofore been possible. We call attention to the introduction of monthly graphics clearly showing the trend of production, stock on hand and unfilled orders during the last twelve months. By persistent tracing, we have been able to obtain the participation, in these features, of many companies who have hitherto shown little or no interest.

ACTIVITIES OF DIVISIONS INCREASED

"Third—STIMULATION OF ALL OF THE DIVISIONS.

"By order of the board of directors, the secretary was, on May 22 last, instructed to act as secretary for the various divisions of the association. Since that time, the secretary, or the assistant secretary, has attended every division meeting which has been held. Special efforts have been made to give complete and intelligent accounts of the meetings,

and to distribute same to division memberships promptly. Determined efforts have been made to focus the interest of all division members upon the importance of accurate



Three Well-Known Face Brick Men Who Are About to Take Advantage of the Ideal Weather and Go On a Long Hike.

cost information gathered at regular periods. To this end, an expert accountant has made short and timely addresses to a number of our divisions, and the secretary's office has prepared graphic charts of contributed figures, or special forms for one or more meetings of nearly every division. The attendance at division meetings has generally been increased by the publicity which is being given them by the secretary's office, by enthusiastic members and by the trade press. Several members have expressed the opinion that the opportunity to discuss with representative manufacturers, at regular intervals, the fundamentals of the business, such as the labor situation and tendencies, fuel situation and prospects, general transportation conditions and other broad matters of timely importance, alone justifies their membership in this organization.

COOPERATING WITH OTHER ASSOCIATIONS

"Fourth—THE SECURING OF REDUCTION OF FREIGHT RATES.

"At the last annual meeting, the membership voted unanimously to instruct the association's traffic committee to proceed with its proposed formal complaint before the Interstate Commerce Commission, in connection with the National Paving Brick Manufacturers' Association and the Hollow Building Tile Association. This work has been vigorously prosecuted by the traffic committee, with the result that the case is now almost ready for hearing. As M. F. Gallagher, one of the special traffic counsel employed in this case, will lay before you the present status of this matter during this session, it is unnecessary for the secretary to add further comment here. Knowing, however, the large amount of work which has been done in your behalf by the traffic committee, we feel that the gentlemen composing it are entitled to your grateful appreciation.

"Fifth—UNIVERSAL ADOPTION OF UNIFORM COST ACCOUNTING SYSTEM BY UNITS OF THE INDUSTRY.

"We are glad to advise that a number of additional members of this association have, during the past six months, installed the cost accounting system which was adopted by this membership. It is natural to believe that, with the stimulation of interest in this subject which is vigorously being carried on at division meetings, the number of members using the approved system, will constantly increase.

"Sixth—STIMULATION OF DEMAND BY CAREFULLY THOUGHT OUT AND EFFICIENTLY EXECUTED PROMOTION CAMPAIGN.

"As this objective is to be given minute consideration by the association's director of advertising at the second session of this meeting, remarks upon same at this time, would be superfluous.

ACKNOWLEDGES GREAT AID OF PRESIDENT

"It will be readily understood that the demands upon the secretary's office have heavily increased during the last six months. To meet these demands, new systems have had to be installed and additional assistance secured. We are of the confident belief that as time goes on the work of the secretary's office can be made more and more satisfactory to the membership. This ideal shall be constantly before us.

"The association has been favored in many ways during the year 1919. One of the most important of these has been the personality, ability and unselfish energy of its president. Taking the helm of this organization during its evolution from war-time conditions, he not only steered it safely thru that critical period, but has since directed its energies thru a period of great expansion of membership during which it has been necessary to reach sound conclusions on vital, intricate and enormously large policies. The secretary of



Three of the Ladies Whose Husbands Are Attending the Sessions at the Conventions, Just Taking a Stroll.

an institution of this kind, which has grown to occupy so important a part of the business of each of its members

would be remiss in common courtesy did he not, at this time, acknowledge his gratitude for the wise direction and never failing sympathy and understanding of our president—Mr. Frank W. Butterworth.”

FINANCIAL REPORT REVEALS BIG ACTIVITY

The financial report which, if anything, proved to be the most interesting of all documents read at this session, showed that the association is fast breaking into the plutocratic (not Pluto-cratic) class. A maze of figures is usually meaningless and uninteresting to the average reader, so without attempting to reproduce the financial statement that was read, it might be recalled that since September 25, the date upon which the first payments on the new association contract became due, the organization has received an amount of revenue which easily insures a \$300,000 annual income. The heavy initial expense involved in getting the promotional and publicity campaign launched, has been met, the office force and equipment of the association have been largely increased, substantial legal counsel has been retained, and all bills promptly paid with a substantial balance on December 1.

M. F. Gallagher, one of the two attorneys retained in the freight rate case, gave a very comprehensive report of developments to date. Mr. Gallagher's statement probably will appear in full in the December 30 issue of *Brick and Clay Record*.

Impressing upon the membership the need for continued activity in rounding up all of the face brick manufacturers who are not as yet members of the association and who have not signed the articles of agreement, President Butterworth appointed a membership committee of which W. T. Matthews, of the Claycraft Brick & Mining Co., was chairman.



From Left to Right: I. A. Ryttenburg, Sumter (So. Car.) Brick Works, R. P. Stoddard, Common Brick Manufacturers' Assn., and T. L. Herbert, T. L. Herbert & Sons, Nashville, Tenn.

There was not very much material to work on, since nearly every manufacturer in attendance was already a member

of the association. However, one new member was signed up, and two or three were secured whose names are as good as already on the dotted line.



F. T. Owens on the Left With His Pet (Pipe) in His Hand, Out for Exercise With Two Companions.

JOINT SESSION WITH DEALERS ON WEDNESDAY

The joint session of the Face Brick Dealers' Association with the face brick manufacturers, which took place on Wednesday morning, proved to be full of interesting subjects. Elmer H. Adams, senior member of the well known firm of Adams, Childs, Bobb and Wescott, Chicago, gave an address that was a liberal education in the up-to-the-minute facts and principles of sane and progressive trade organizations. Every one of his three hundred interested listeners received a new vision of the possibilities for better profits and thoro going business efficiency, which await concerted effort on the part of all vital factors in any industry.

Industry in this country, Mr. Adams says, has developed so that as producers and engineers, we have reached a high plane of achievement, but on the other hand, as merchants, we are still very far in the background. The complete text of Mr. Adams' address, which he called "Cooperative Competition," is published on another page in this issue of *Brick and Clay Record*.

Dr. G. C. Mars, director of advertising for the American Face Brick Association, was introduced as the next speaker. But before he discussed his subject, he introduced Louis Grilk, western representative of the Geo. L. Dyer Co., New York, which is the firm of advertising specialists retained by the association for the working out of the campaign. Mr. Grilk, in a brief informal talk, stated the objective of advertising was to get into the consciousness of the public. He declared that in all of the history of advertising propaganda, the actual cash returns of the past twelve months have broken all records and astonished some of the largest users of this vital sales medium. A new appetite and hunger for data and knowledge concerning sales articles of every description, has apparently developed thruout the en-

tire country. Never before has the value of publicity that makes good been so self-evident, and in like measure, never before has fraudulent advertising of any kind proved such an immediate boomerang for the short-sighted interests that have tried to put it across.

POINTS OUT HOW AND WHEN TO ADVERTISE

Mr. Grilk pointed out the timely psychological fact that the ideal time to sell any man is the moment or the season when he is not in the market to buy. That is exactly the way in which a national publicity campaign, reaching the possible consumer in his favorite weekly or monthly magazine, is succeeding so marvelously. Mr. Grilk concluded by urging the face brick men of America to sell their product among the millions of possible users of this material thru just such methods of repeated, indirect, but compelling appeal.

Director Mars then stated that the manufacturers' campaign is soon to be inaugurated in twenty-seven of America's most representative magazines that reach a total audience of fifteen million subscribers, with an estimated direct contact of forty-five million possible readers. Even cutting this vast figure squarely in two, the cost of reaching twenty million possible adult consumers would be approximately three-fourths of a cent, on the basis of the campaign outlined. Going still further Dr. Mars stated that with only one hundred thousand homes actually responding to this appeal, the following literature of the association comprising most practical and artistic booklets and house designs would be placed before those most interested, at the extremely low rate of from one dollar to one dollar and a half at most per home.

OBTAINS VALUABLE SETS OF HOUSE PLANS

Dr. Mars described the unique competition just concluded thru the cooperation of the "Architectural Forum" as a result of which the association was now in possession of no less than three hundred and sixty-six superior designs of brick construction. These designs were not merely "canned goods," but the fresh, highest class, prize suggestions of the most enterprising architects of the entire country. The committee of awards has reported that at least a hundred and fifty of the designs submitted are of the very highest class and worth while value. All of them are to be thoroughly edited by experts and will then be made available for the use of consumers, contractors, and dealers.

The afternoon session of Wednesday, was given over to the meetings of the various divisions of the American Face Brick Association. There are seven of these divisions in different geographic locations which meet monthly to discuss the fundamentals of the face brick business.

One of the most interesting of all the sessions during the convention was that held on Thursday morning. President Butterworth, in introducing the chief speaker of the morning, E. H. Scull, of the firm of Ernst & Ernst, expert accountants, stated that he looked forward to the day when every member of the association would figure his costs according to the same outline, and will be prepared to exchange his figures with other manufacturers. Mr. Scull illustrated his talk with charts, showing the work that was being done in connection with cost comparisons in other trade organizations, referring especially to a group of department stores located in one community.

FIGURES SOMETIMES DO LIE

One of the chief reasons for some manufacturers hesitating in permitting a comparison of their costs with others, has been that inasmuch as their costs were exceedingly low they did not feel it profitable for them to show other manufacturers how to obtain these results, especially, as the first manufacturer had spent many years and much effort to

bring his plant to this point of efficiency. Mr. Scull, however, pointed out as in the case of the department stores that these manufacturers do benefit in several ways, and that usually the manufacturer is in error because of a misinterpretation of his figures. The large amount of discussion that followed this instructive paper signified the intense interest manufacturers held for this important subject.

The report of the nominating committee then followed. Those nominated for office were: president, John H. Black, Jewettville Clay Products Co., Buffalo, N. Y.; first vice president, S. C. Martin, Kittanning Brick and Fire Clay Co., Pittsburgh; second vice president, B. W. Ballou, Kansas Buff & Manufacturing Co., Kansas City, Mo.; secretary-treasurer, R. D. T. Hollowell, 110 South Dearborn St., Chicago.

The board of directors include: Geo. A. Bass, Hydraulic Press Brick Co., St. Louis, Mo.; H. R. Beegle, Beaver Clay Mfg. Co., New Galilee, Pa.; P. B. Belden, Belden Brick Co., Canton, Ohio; W. H. Brecht, Boone Brick, Tile & Paving Co., Des Moines, Iowa; F. W. Butterworth, Western Brick Co., Danville, Ill.; T. P. Cuthbert, Fallston Fire Clay Co., Pittsburgh, Pa.; W. H. Hoagland, Claycraft Mining & Brick Co., Columbus, Ohio; B. Mifflin Hood, B. Mifflin Hood Brick Co., Atlanta, Ga.; G. B. Luckett, Crawfordsville Shale Brick Co., Crawfordsville, Ind.; D. H. Miller, Milton Brick Co., New York, N. Y.; J. W. Moulding, Thomas Moulding Brick Co., Chicago, and C. C. Stratton, Alumina Shale Brick Co., Bradford, Pa.

INTRODUCING THE NEW PRESIDENT

At this point it will not be amiss to say a few words about the new president. John H. Black is one of the best known face brick men in the United States. He entered the clay business some twenty years ago as a dealer, but his interest in this line of endeavor finally landed him into the manufacturing end which he entered about ten years ago. The Jewettville Clay Products Co. is a pet of his in which he is highly interested. The factory lies on the outskirts of the city of Buffalo where high grade red brick of both smooth and rough texture are manufactured. Mr. Black has been a member of the board of directors of the American Face Brick Association ever since the inception of this organization. He has been on the executive committee for the past two years and for the last three years has also been chairman of the eastern red division during which time the progress of the activities of this division has been remarkable.

In summing up the meeting it is doubtful whether any one feature was more significant than the rest. Each manufacturer seemed to hold a different view as to what was the most salient feature of the convention. Some said that it was the spirit of cooperation between the members which had reached the highest point ever attained in the industry. Some felt that the fact that this meeting marked the formal launching of the advertising campaign, was the important event. Others seemed to think that the personal contact and exchange of views and problems which can only be had at a meeting such as this, was worth more than can be measured in dollars and cents. The fact that the manufacturers were beginning to realize more the advantage of uniform cost accounting and the value of comparing costs, was considered by a number to be a very great step forward in the annals of brick making. The fact that there is such a wide divergence of views on the question as to what was the most significant and important event of the meeting, signifies that this convention was full of important proceedings, and as a few described it,—it marked the transition point of the association from an organization built and founded on substantial and worthy

ideals to a genuine realization of its ideal. As T. L. Herbert of Nashville, expressed it, "The association is beginning to function now."

CREDIT FOR ROUNDING OUT ASSOCIATION

A large part of the credit for the actual bringing about of the theories that were held by many of the members for a long time, must be given to the chief executive of the association, who just finished his term. Frank W. Butterworth, has served the organization in an enviable manner, and it is largely thru his untiring efforts and liberal contribution of time, that the molding of the ideas and plans of the association has taken such a well designed and substantial form and is now ready to function like a powerful engine.

Owing to the fact that the association did not register the members present, it was hard to obtain a roster of those present at the meeting. However, we publish below an incomplete list of men who attended both the American Face Brick Association and Face Brick Dealers' Association convention.

Andres, John.	Hoagland, W. H.	Porter, D. B.
Anderson, Geo.	Hodges, P. C.	Plumb, E. F.
Adams, E. H.	Herman, C. F.	Pierson, C. V.
Adams, J. M.	Holles, F. A.	Pick, Ed. G.
Baker, J. T.	Hervey, E. C.	Pursell, Walter.
Black, John H.	Harbison, R. C.	Queisser, R. L.
Bonner, Chas.	Howard, E. C.	Queisser, R. L., Jr.
Blanchard, F. N.	Howard, R. D.	Riggs, Arthur.
Bass, Geo. A.	Harrison, C. F.	Rytenburg, I. A.
Butterworth, F. W.	Howington, J. S.	Rogers, Eben
Supple, Guy.	Hughes, J. L.	Rowell, Mr.
Black, W. C.	Hock, Jos.	Reid, A. S.
Blatz, Mr.	Hassenstein, Carl.	Robertson, J. G.
Bolster, L. J.	Hargrave, W. B.	Richards, B. H., Jr.
Bishop, J. J.	Holmes, H. W.	Rosenberg, H. H.
Barbour, J. G.	Hall, J. D. W.	Randall, T. A.
Brocas, H. A.	Hartung, P. W.	Rhodes, C. H.
Beegle, H. R.	Harrington, John T.	Sankey, W. E.
Ballou, B. W.	Hamilton, H. S.	Smit, W. S.
Bilque, G. A.	Hamilton, H. S., Jr.	Smith, A. U.
Belden, P. B.	Henderson, F. T.	Stratton, C. C.
Banker, F. G.	Irwin, C. W.	Squires, F. D. L.
Brecht, W. H., Jr.	James, F. B.	Stoner, J. M.
Baltes, E. M.	Johnson, J. K.	Shamon, P. D.
Briggs, L. V.	Johnson, John D.	Sprague, L. W.
Barr, H. N.	James, C. B.	Stewart, E. A.
Bremen, W. L.	Jones, Clinton.	Spikings, Chas.
Binyon, L. D.	Kemp, P. G.	Sharpless, S. F.
Barney, W. E.	Kimbell, A. W.	Stevens, D. F.
Combs, R. M.	Key, J. D.	Stephenson, L. L.
Childs, Robert.	Knoske, O. G.	Sibley, J. W.
Crowell, J. M.	Koch, H. F.	Simpkins, Ralph.
Clarke, D. W.	Kruger, L. A.	Snyder, W. J.
Cuthbert, T. P.	Kreighaber, V. H.	Shoemaker, W. A.
Crowell, H. H.	Kleymeyer, H. C.	Shorey, D. C.
Cartwright, V. H.	Lehman, David.	Sheehan, J. B.
Cook, J. S., Jr.	Lafountain, Fred C.	Steinhoff, F. L.
Conley, F. E.	Luckett, G. B.	Samuels, C. B.
Day, S. K.	Lounsberry, H. D.	Stirling, Geo.
Donahue, J. H., Jr.	LaBar, R. N.	Smyth, H. A.
Degenhart, W. J.	Landers, C. C.	Stringer, H. E.
Davis, A. E.	Lyons, J. C.	Schaffer, Mr.
Dobbs, S. B.	Lyons, A. B.	Stoddard, Ralph P.
Dingledine, R. S.	Landgrebe, G. C.	Taylor, Robt., Jr.
Devitt, H. B.	Lucktenberg, J. W.	Taylor, J. Crow.
Dunlap, A. M.	Meyer, A. B.	Thomas, J. R.
Doherty, J. L.	Merrill, F. R.	Turpen, J. P.
Dean, G. P.	Morrissey, J. E.	Tondreau, F. H.
Ehler, H. P.	McCoy, J. J.	Taylor, Mr.
Everhard, M. M.	Montgomery, M. W.	Thompson, B. C.
Findlay, R. L.	Martin, S. C.	Van Etten, W. C.
Feit, Leo.	Matthews, W. T.	Van Nest, C. E.
Fowler, J. C.	Martin, J. D.	Van Ormer, C. R.
Fish, J. J.	Miller, C. F.	Varney, W. P.
Foster, C. E.	Miles, H. T.	White, H. F.
Fry, W. N.	Martin, H. T.	Wheeler, B. T.
Flanders, Ed.	Mattes, C. F.	Williams, B. S.
Freeman, T. B.	Matter, S. E.	Whaley, W. E.
Folsom, E. W.	Moore, F. L.	Wheeler, B.
Gunn, C. A.	Moreman, S. A.	Wheeler, Mr.
Gifford, W. H.	Meyers, A. B.	Wittpenn, H. Otto.
Grilk, Louis.	Mollering, H. L.	Wicklund, H. A.
Gardner, C. A.	Miller, D. H.	West, C. A.
Gallagher, M. F.	Moulding, T. C.	Winters, W. B.
Green, Tom W.	Mossman, G. M.	Williams, J. P.
Gaddis, L. W.	Miles, H. T.	West, W. P.
Girard, J. N.	Mernaugh, R. L.	Waugh, J. B.
Grand, E.	Mahoney, D. P.	Weaver, Don
Hanley, W. D., Jr.	Mars, G. C.	Williams, H. F.
Hindman, F. T.	McKown, W. R.	Williams, R. T.
Harker, O. A., Jr.	McComb, C. C.	Williams, W. B.
Hollowell, R. D. T.	McKay, R. J.	Williams, F. G.
Hitt, E. G.	McFadden, C. P.	Walters, Carl C.
Hewson, S. J.	Nicholson, Jos.	Zimmerman, C. V.
Hood, B. Mifflin.	Owens, F. T.	Zinn, J. H.
Herbert, T. L., Jr.	Oviatt, D. G.	Zorn, E. G.

Program for New Jersey Annual Meeting

Professor George H. Brown, director, Department of Ceramics, Rutgers College, New Brunswick, N. J., and secretary of the New Jersey Clay Workers Association and Eastern Section of the American Ceramic Society, has been arranging an interesting and instructive program for the annual meeting of the organization to be held at New Brunswick, December 18, as announced in recent issues of *Brick and Clay Record*. The program, as tentatively determined, includes the following:

Homer F. Staley, "Feldspar as a Pottery Material;" R. L. Clare, Federal Terra Cotta Co., Woodbridge, N. J., "Oil Firing;" J. D. Davis, fuel administration, Washington, "Fuel;" W. L. Howat, Trenton, N. J., "Terra Cotta;" Arthur S. Watts, "General Ware;" and Chester Treischel, General Electric Co., Schenectady, N. Y., "Tunnel Kilns." Roy H. Minton, General Ceramics Co., Metuchen, N. J., has consented to lead a discussion on gas producer fire-boxes.



Railroads Make Profit in October

Director General Hines made public a report on December 1, showing that the railroads under government operation showed a profit of approximately \$11,000,000 for the month of October, according to preliminary figures on October earnings. The report also shows that a profit, after paying operating expenses and rental to railroad companies, was made by the government in the months of August and September, altho losses during the period of slack business in the early months of the year makes the net loss to the government for ten months of 1919 equal to \$269,768,158.



To Revive Iowa Association Convention

There is considerable talk among the Iowa producers for the revival of the old state convention of the Iowa Clay Products Manufacturers' Association. Prof. H. F. Staley, formerly at the head of the ceramic department of the Iowa State College, who was secretary of the old association, has been absent from Iowa for more than two years and for this reason the preparation of the convention will be in charge of the Permanent Building Society. It is likely that a call for the convention will go out soon with Des Moines as the meeting place and the probable dates to be late in January or early February. H. S. Vincent of Ft. Dodge is president of the association.



Invents Clay Phonograph Needle

Iowa clay producers are watching with considerable interest the experiments being made by the Adel (Ia.) Clay Products Co. in the manufacture of clay phonograph needles. The Adel concern has fitted up one of its smaller buildings for the manufacture of these needles and the commercial value of the experiment has already been demonstrated.

In the production of this new clay product the clay is handled entirely different than for ordinary uses. The shale is taken from the bank in selected chunks of suitable sizes and is dried in its raw state in electric dryers and is then sawed into pencils. These pencils are then fed into a machine designed by H. R. Straight, superintendent of the Adel Clay Products Co., which turns and sharpens them. The clay needle produces an excellent tone and on tests made in his own home Mr. Straight has demonstrated that after being used a hundred times the needles produced as clear and good tones as on the first trial.

COOPERATION KEYNOTE of DEALERS' MEETING

*J. H. Donohue of St. Paul Elected President—Former Governor
Ferris Delivers Wonderful Address on Industrial Cooperation*

RICK SELLERS AND MAKERS from every point of the compass captured French Lick Springs December 2, 3, and 4, and from the opening moment of the simultaneous sessions, set a new pace in effective convention discussion and decision for the big industry they represent.

Special trains and blocks of prearranged Pullmans arrived at almost the same hour from Chicago, Cincinnati and Kansas City, collectively bringing nearly three hundred producers and distributors of the most artistic article in the material dealers' stock equipment. The East, from Portland, Me., to Atlanta, Ga., sent an enthusiastic quota; most of whom took advantage of the open house invitation of the Cincinnati Brick Club, and after enjoying its famous brand of hospitality at a dinner and informal smoker, Monday evening in the Cascades Room of the Gibson Hotel, started out in prime good humor for the convention rendezvous in a quartet of Pullman sleepers, that eliminated the usual nightmare of midnight changing at some out-of-the-way Hoosier junction. Eighty-nine delegates participated in this happy arrangement, and their arrival quickly transformed the somnolence of offseason sluggishness of French Lick to one of brisk and festive activity.

Nearly the same number of delegates from Chicago, the Central and Northwest States pulled in over the Monon, while the rest of the country rapidly swelled the ranks of the convention visitors.

THE "BIG THREE" FEATURES

The three big features of the three days' event, which figured with equal prominence in both meetings, were the key-notes of *cooperation*, a new *Nation-Wide Publicity Program*, and the principle of *100 per cent. dealer distribution*, which latter found many warm advocates and discovered a host of new ones, as a result of the practical and friendly interchanges of counsel and experience.

The dealers' meeting, opened promptly on the dot by President Stoner, Tuesday afternoon, began with a crowd that packed the hall to standing room only. After reading of the minutes of the Edgewater Beach Convention last February, Secretary Montgomery reported that the treasury showed accounts were in most encouraging and solvent condition, with \$1,005.22 on hand. President Stoner then struck the key-note for the entire session in declaring the first order of business to be a democratic presentation of dealer problems, from the floor. He added that the Association, now equipped with an executive field secretary and a national headquarters of its own, was in position to take up in definite and effective fashion the individual problems of dealer members wherever there was need of outside counsel and co-operation with the local organization involved. The invitation extended by President Stoner brought immediate response, and the first two and a half hours brought to light many situations manifestly needing but proper sup-

port from the national body to work out to satisfactory conclusions.

One of the significant facts developed in this discussion was the very encouraging mutual understanding, which has been effected and established upon an apparently permanent basis between dealers, manufacturers and contractors, in a number of the best known cities of the Central West. In some of these the face brick makers are active and most helpful members of the local dealers' organization, and in others, builders are affiliated in very much the same way.

Before the close of the first session, Secretary Montgomery announced that eighteen new members had been added to the Association roll within the past two months, and that ten new applications had been received since arriving at French Lick. Two committees were chosen, one to report on the division of the constitution, consisting of Carl C. Walters, T. B. Black and J. H. Donohue.

The nominating committee consisted of Don Weaver, T. B. Freeman and R. B. Howard. For the sake of securing widest possible range of choice in the selection of the new officers, President Stoner suggested that the committee propose two or more names as candidates for each office.

The Joint session of the two conventions Wednesday morning, will go down as one of the most memorable successes in all the annals of the industry. The speakers of the morning were Elmer H. Adams, senior member of the well known firm of Adams, Childs, Bobb & Westcott, Chicago; G. C. Mars, Director of Advertising of The American Face Brick Association, and Louis Grilk, Western Manager of the George L. Dyer Advertising Agency. A report of this session is given in the story of the manufacturers' convention.

GOVERNOR FERRIS THRILLS DEALERS

Wednesday afternoon, the dealers again assembled in force and were given the greatest treat of the entire session in a wonderful address delivered by Hon. Woodbridge N. Ferris, former governor of Michigan.

Speaking to the subject "Industrial Cooperation," Governor Ferris delighted his hearers with a frank aggressive declaration in favor of a revival of old-fashioned democratic good will and mutual human sympathy between all factors in industry. He pointed out that the ideas of cooperation and community service, are really the touchstones of American character, that all the essential qualities that are needed today to exercise bolshevism, eliminate distrust, strick fevers and the wild ravings of unbalanced agitators, are just the simple home-spun way and means of earlier days. Men are starved today for lack of this spirit of mutual interest and kindness. Besides that, despite all that is said to the contrary, the millions that make up the great mass of the American foreign-born are equally hungry for education, the learning of the practical facts of life, in the light of which all the flimsy pipe-dreams of anarchism and "direct action" would crumble and evaporate.

"Let's recognize these elements of strength in the days of long ago and once more introduce them into our present current affairs. Let us do something constructive. This apparently concerted effort to paternalize our government is likely to create an autocracy worse than the ones that were shattered in the world war.

"Industrial prosperity is possible only when every man of us recognizes and applies with his own hands and in his own business, the one tremendous need of the hour. 'That is, WORK.' If I had my way, every man of us, every member of society, every business man, every lawyer, every banker, every preacher would have to do a certain amount of physical work every day, so that his social sympathy with the rest of humanity might be more real and effective. Cut down your extravagances. Slice your gasoline bills, and do your part. The Germans philosophy that failed wove its false ideals round the doctrine of 'might.' Today we must admit that not might, but mutual need and mutual service are the greatest motives that can move and quicken the heart of humanity.

"I am sorry for the man who doesn't believe in organization. Organization is all the more essential today, because of the many sided problems that no individual can solve alone."

Governor Ferris concluded with an eloquent plea for aggressive application of American principles. He urged the abolition of race hatreds and all race prejudices. People are tired of charity, he declared. Fellowship, human comradeship and not merely an eternal rising scale of wages will work out the difficulties in the way of industry.

ELECT NEW EXECUTIVE BOARD FOR 1920

The final session of the dealers, Thursday morning, was packed full of interest because of the reports of two committees, one on the revision of the constitution and the other, the committee on nominations.



M. T. Montgomery, Secretary of the Face Brick Dealers' Assn. and the Newly Elected President, and Mrs. J. H. Donohue.

After an exhaustive consideration of the most feasible way in which to fairly apportion the year's budget among the

membership, the convention heartily adopted a financial program which assures efficient and progressive working out of the new administrative policies.

No item of the whole session was more significant than the fact that twenty-four new applications for membership were announced as having been received by the secretary since the opening of the session. So enthusiastic and confident were the members present that by common consent one of the features of the next twelve months' activities will be a drive to largely increase the association roster above its present record mark of 250.

The report of the committee on constitution as finally adopted re-affirms the eight-fold purpose of the organization previously in force, but in the light of prospective expansion this declaration deserves re-publication and it is re-printed herewith, as one of the most practical and broad visioned statements of trade organization aim and scope in existence:

"ARTICLE 11"

"OBJECTS: The objects of this association are as follows:

"First: To promote publicity in the transaction of business.

"Second: To promote cordial and friendly relations among members and between members and manufacturers thereby removing as far as possible misunderstandings and ill feelings due to the spreading of false reports and baseless charges and to ignorance of conditions prevailing in the industry.

"Third: To collect when required and disseminate accurate information concerning the manufacture and sale of face brick and other building materials, including corrected statistics regarding the capacity and output of any and all plants engaged in the manufacture of face brick, together with practical reports regarding outputs, shipments, orders and prices; to collect, compile and publish accurate information regarding labor conditions and any and all conditions affecting the industry generally; it being one of the underlying convictions of the association that intelligent competition is far better for the industry than ignorance; and that the public buying such materials will share the profit gained by the elimination of large waste. In this connection it is one of the objects of the association to ultimately make the information gathered official in character and publish statistical results for the information of the general public.

"Fourth: To maintain high and uniform standard in the manufacture and sale of the face brick to the end that customers may be assured of the quality of such materials as they may purchase.

"Fifth: To devise ways and means for promoting the use of face brick.

"Sixth: To take up intelligently, discuss and so far as may be legally done, correct abuses in the many traffic problems which can be dealt with only by an organization.

"Seventh: To cooperate with customers, manufacturers and with each other in the correction of unfair and pernicious practices and customs and in this connection to work out so far as practicable uniform contracts which will be fair and satisfactory to the trade and to the public.

"Eighth: To introduce an open price policy. That is, to bring into the open all competition conditions without in any manner directly or indirectly restraining the freedom of any member to quote such price as it pleases. Each member being as free to compete both with members and with non-members of this association and to the same extent as tho this association had no existence."

CONVENTION ELECTS J. H. DONOHUE, PRESIDENT

The nominating committee, in accordance with the democratic suggestion of the retiring president, Mr. Stoner, pre-

sented a double set of candidates which gave the entire membership a chance to definitely express their wishes. As Mr. Stoner had consented against his firmly expressed desire to continue as president at the Edgewater Beach Hotel convention, in Chicago, last February, the convention reluctantly acceded to his own wishes in the matter and balloted upon the names presented, that of J. H. Donohue, of St. Paul, and G. B. Deane, of New York City, the former receiving the majority of votes cast.

The new president is one of the most popular and successful dealers of the Northwest. His firm is the Corning-Donohue Brick Co., of St. Paul. Mrs. Donohue accompanied her husband to the French Lick convention.

In like manner R. L. Findley, of New York City, and A. B. Meyer, of Indianapolis, were proposed for vice-president, Mr. Findley being chosen to that office.

NEW BOARD OF DIRECTORS

For directors, J. A. Dolben, of Boston, and W. N. Fry, of Memphis, were proposed for the three-year term, F. N. Blanchard, of Lincoln, Neb., and R. N. LaBar, Scranton, Pa., for the two-year term, and Jno. M. Stoner, of Cincinnati, Ohio, and Tom W. Green, of Sioux City, for the one-year term.

The following were elected:

W. N. Fry, of Memphis, Tenn., for the three-year term.

R. N. LaBar, of Scranton, Pa., for the two-year term.

Jno. M. Stoner, of Cincinnati, Ohio, for the one-year term.

A bit of humor was injected into the proceedings at this point by the close finish of the three-year term candidates. When the vote for Messrs. Dolben and Fry was finally announced as a tie the latter had the good fortune to win the coin-flip authorized by the chair.

The convention by unanimous vote passed a resolution of unqualified praise for the retiring officers and directors to which President Stoner replied in a happy word of appreciation, and took the opportunity of wishing the fullest possible measure of success to his newly chosen successor.

Mr. Stoner epitomized the spirit and broad vision of the entire meeting in these words: "There is one idea that I think should be brought before the membership at this time. It has to do with members. We as members of the association are going to conserve its interests as never before. We are going to do our utmost for every dealer in face brick. Whether the dealer is a member or not he is bound to get some benefit from this organization. Everything that is done for a face brick dealer is done for all face brick dealers, whether members or not. It is up to you to get all face brick dealers into this organization. The larger the membership the less will be the individual cost of membership assessment. Go home determined to create the greatest possible interest in your particular center."

FACE BRICK MEN APPLAUD SERVICE CHARGE PROPOSAL

By invitation of retiring President Stoner, Fred D. L. Squires, managing editor of *Building Supply News*, introduced to the face brick dealers present at the Thursday morning session, the proposal for a Percentage Basis Service Charge, explaining in detail the development of the campaign which has attracted nation-wide attention within the past few months. Altho conditions in regard to face brick dealer-manufacturer relationship are somewhat different from and in many cases far more satisfactory than the situation in regard to other building materials, the outline of the plan was given the closest possible attention by the delegates and provoked some illuminating discussion. Hearty approval of the proposition was manifested by all.

Speaks on Control of Resale Price

Chairman William B. Colver of the Federal Trade Commission, speaking at Atlantic City on November 21, before the convention of the American Specialty Manufacturers' Association, earnestly urged support of the Stephen's Bill, as amended, and set forth in detail the commission's position with respect to the whole question of control of resale prices on trade-marked products.

Commissioner Colver referred to the reports circulated by opponents of the measure that the commission wanted power to fix prices itself and denied all such statements flatly, insisting that no legislation was contemplated by the commission except the Stephen's Bill, the provisions of which he explained as follows:

"So all that has been suggested is that if and when the right to maintain a resale price is declared by law—and that such right may properly be so declared—then that a manufacturer should be left free to exercise that right or not if he pleases. If he does not exercise it his prices will be subject to the modification of the play of free competition. If he does elect to exercise it then he may fix any price he may choose and may maintain that price by refusal to sell or otherwise so long as the fairness of the price to the merchant and to the consumer is not challenged as inequitable. If challenged he is to have every opportunity to defend it but if found unreasonable he may not continue to maintain it by force. In such case he may either revise his price and force its maintenance, or continue the price but not be permitted to force its maintenance.

"That is all that the commission or any of its members have suggested. There is nothing withheld or hidden. It is an open and dandid declaration of opinion arrived at, we believe, in the public interest—which is to say in the highest interest of business itself."

* * *

Developing Export Trade in Clay Ware

A number of the fire brick and burned clay products manufacturers in the New York district are making a pronounced drive for export trade. Among these, the Brighton Fire Brick Co., 8 West Fortieth Street, is specializing in fire brick and standard shapes for foreign account; the material is being especially packed in barrels or crates for this purpose. The Atlantic Terra Cotta Co., 1170 Broadway, New York, with works at Perth Amboy, N. J., is another interest that is developing trade in this direction, producing fire brick and shapes for export purposes. The East Ohio Sewer Pipe Co., New York, with plant at Irondale, Ohio, has been offering high-quality vitrified salt-glazed sewer pipe for foreign account; prices are being made f. a. s. (free alongside steamer) at the local port.

* * *

Remedies for Labor Unrest

Merchants' Association of New York has adopted report of a Committee on Industrial Relations which advocates: (1) recognition by employers and workers of first obligations to prosperity of community; (2) establishment of a recognized and permanent method of conference between workers and employers by which collective agreements may be reached as to wages and working conditions; (3) "The limitation of the economic law of supply and demand as a basis of labor policy by the utilization of a more human doctrine." Committee found that profit-sharing plans, while often of great value, should be regarded as "aids, not remedies," for labor unrest; committee recommended installation of employment departments under skilled management in all establishments.

COOPERATIVE COMPETITION

A Wonderful Review of the History of Industrial Organizations and the Evolution of the Modern Trade Association, Which Proved Its Right of Existence During War Period to the Degree of Having the Government Approve and Urge Its Formation

By Elmer H. Adams

*of Adams, Childs, Bobb and Westcott, Legal Counsel for A. F. B. A.
Read at the French Lick Meeting, December 3, 1919*

IN THE EARLY HISTORY of the country large industries were not in existence. It is only as transportation facilities have increased that there have been established great manufacturing plants and great centers of industry.

In those days each community was really a manufacturing center unto itself. The little mill driven by water power ground the flour; there would be a small local iron plant to furnish iron implements; clothing was either home spun or there would be a small plant in the immediate vicinity. In each community everything that was used was made there.

As railroad transportation, however, came into existence great centers of industry sprung up. The big iron manufacturing plants were either established near where the ore was produced or within striking distance of the coal mines, or close to a central market. Great flouring mills were built at central points of railroad transportation and large elevators were constructed at these points. Thus, we find that Kansas City sprang into a great grain market, Minneapolis and Saint Paul great flour manufacturing centers, Pittsburgh into a great iron industry and in the neighborhood of Boston we find the big cotton mills and leather industry.

Of course, the first one who started up had an advantage temporarily because he was close to the raw product and being located at central distributing points could thereby meet any competition that might arise, but it has always been the rule that success invites competition and soon others realizing the advantage that the first one possessed, established plants in relation to supply and distribution.

ORIGIN OF THE TRUST

Just after the civil war there was an era of wonderful prosperity, the greatest railroad building of the country occurred and the result was that until 1873, the entire country enjoyed great prosperity in all lines of business. In 1873 occurred a panic then followed another era of prosperity up to 1893. From 1873 to 1893 competition became keen, and ways and means were being devised by which general business could be conducted on a profit basis and then arose in this country what is commonly known as the "Trust." Competition had become so keen that some remedy had to be devised in order to keep a great many of the large concerns out of bankruptcy, and the plan was devised whereby several of them could be put into one corporation thus avoiding duplication and overhead expense

and several bankrupt concerns became a prosperous trust. Then followed legislation by the United States and by individual states enacting what is known as the Sherman Act and other anti-trust measures.

These acts were aimed to stop illegal combinations in restraint of trade, and it was believed that the evils which should be stopped were agreements fixing prices and unfair business methods.

Up to a few years ago business men were suspicious of each other. The idea of giving any information to your competitor as to what it cost you to do business, as to what you received for your product, as to the manner in which you conducted your business was never dreamed of, but trade organizations sprang into existence and thereby business men became acquainted with their competitors and soon discovered that there were certain lines of information which could be exchanged which would be of great mutual benefit to each and so today we have trade organizations in practically every line of industry.

The old-fashioned ideas of competition are gradually dying out. This view that old-fashioned competition is a thing of the past finds forceful expression in Eddy's "The New Competition." This examination of the adjustment that is taking place in business—a *change from competition to co-operation*—concludes "Two very large factors in modern society are opposed in theory and practice to competition as commonly understood. Unionism will have none of it in the world of labor." That this is true is fully demonstrated by the action of various labor unions during the past three years. Socialism will have none of it in the world at all. "When to the opposition of the two factors is added the opposition of the capitalists, society would seem to be pretty nearly a unit to the effect that *competition is not the good thing it is said to be.*"

ERA OF COOPERATION USHERED IN

After the panic of 1893 and during the recuperative period from 1893 to 1898 men capable of intelligent thought came to the conclusion that competition as then practiced was destructive, and that combination, or a recognition of a community of interests in some form was absolutely necessary to enable all persons engaged in productive industries to make a profit. Unregulated competition forced the era of cooperation into existence, which commenced when men began to change their business methods to safeguard their business against

wastage and destruction by adopting measures to restrain trade by regulating competition between themselves.

This led to several different methods of accomplishing the same result. Trade organizations were formed and consolidation of existing corporations were accomplished. Trade organization first attempted to accomplish results by organizing retailers who would refuse to buy from wholesalers who sold direct to the retail trade. These cases are what are commonly known as the Northwestern Retail Lumber Dealers' Association, and the Southern Wholesale Grocers Association, and in both of these cases the discrimination against the wholesaler was declared unlawful.

No criticism has ever been made of an association which was organized for the purpose of promoting the business of the organization, settling its labor problems, ascertaining the cost of the manufacture of its product, and distributing information relative to existing facts among its members.

THE EVIL RESULTING FROM COMBINATIONS

The other question, namely, the consolidation of several companies into one large corporation resulted in unfair practices being put into effect by the consolidation company. The large combination thus formed would attack the weaker ones by underselling, making false reports as to the product carried by the smaller manufacturer and even destroying the property of the small manufacturer. To summarize the cause which led to the formation of these two classes of organization, we can say it was excessive and unfair competition, whereby manufacturing capacity was duplicated, selling costs unduly enhanced, and profits and credits imperiled. Unfair competition drove the morale out of business. Potential as well as actual competition were effective influences in bringing into existence the large consolidated corporations, also the necessity of greater cooperation among corporations in their effort to cope with the demands of trade unionism as a bargaining power, the belief that in combination lay the hope of better relations between capital and labor, and the desire to promote a higher type of welfare among employees. These were also the main social motives among the industrial and financial leaders.

After the panic of 1893 it was not so much a question of law as one of life for the majority of business corporations. Salvation lay in agreeing by common consent not to do certain things, such as cutting one another's throats, commercially speaking. In their distress there was practically no enforcement of the anti-trust law. In fact, the tendency to mitigate the evils of an undermining rivalry dates much farther back.

THE LIMITATIONS OF PRICE CONTROL

One of the most difficult problems in the business world is to prevent by legitimate means those wide fluctuations of prices which work havoc to trade and industry. To maintain some degree of normality in trade conditions so as to insure average profits for average abilities and opportunity, some degree of foresight and common knowledge of conditions are necessary. Wherever the law is strict in its application to restraints of trade and monopoly, the methods of limiting these injurious price swings are necessarily few. Whatever policy might be adopted must work itself out within rather narrow legal and equitable limitations. To use the words of Judge Gary before the House Committee: "You have no right to endeavor to prevent reductions in prices, or, in other words, to maintain the equilibrium of business and maintain prices substantially level, or at least free from sudden and violent fluctuations, by means of any sort of an agreement, express or implied. You have no lawful right to make any agreement, express or implied, directly or indirectly, with competitors in business to main-

tain prices notwithstanding you are receiving letters daily from the jobbers all over the country, begging, if possible, to prevent demoralization and to prevent decrease in prices which should mark down their inventories and in many cases subject them to the risk of bankruptcy. On the other hand, considering this same question of sustaining, so far as practicable, the equilibrium of trade, Judge Gary said: "We believed we had no moral or legal right to become involved in a bitter and destructive competition such as used to follow any kind of depression in business among the iron and steel manufacturers, for the reason that if we should go into competition of that kind it would mean war of the survival of the fittest; it meant that a large percentage, as in old times, of the people engaged in the manufacture of steel would be forced into bankruptcy, for many reasons—their facilities for manufacture were not so good, their cost of production was high, their equipment, their organization, their decreased ownership of some of the raw products and other things of that kind which enter into the cost of production, would place them at a disadvantage, and, therefore, it was believed, by me at least, that it was not for the best interests of the manufacturer generally, or for their customers who desired stability as opposed to demoralization and wide fluctuations, or for the employees of the various corporations thruout the country who desired, so far as possible, steady work—continuous work at the best prices; and a wide, sudden, extreme lowering of prices necessarily meant reduction in wages."

COMPETITION LIMITS SHOULD BE DEFINED

Every sharer in the distribution of the products of industry is vitally interested in the successful elaboration of a policy that will set reasonable limits to price fluctuations. For whatever each participant gets comes out of the selling price. Under unbalanced relations of supply and demand, long-term contracts become impolitic, if not impossible. Uncertainty rules where foresight should prevail. The owner of natural resources, the lender of capital, the wage-earner and the business manager—all of these are a unit in wanting to find some way out of the chaos of unrestrained competition. There is, in theory at least, a line within which competition is both free and fair, and therefore constructive; *a line beyond which lies economic wreckage or monopoly. It is to the interest of every member of society that such a line of demarkation be discovered and defined, because it marks the boundary between economic life and death, between civilization and relapse to savagery.*

In the early history of Trust litigation great uncertainties existed as to the interpretation that would be given of the law. The first attempt was to hold every form of cooperation in violation of the Trust Act. Men were afraid to join trade organizations for fear the mere joining would constitute a crime of doing an act in restraint of the trade. Meetings of Trade Organizations were secret and the proceedings were very carefully guarded; instead of the Trust Act really encouraging competition it drove men to discover ways and means by which they could do the other things the law prohibited and escape its penalties. All sorts of schemes were tried; as an instance, it was thought that if a business man would go into a foreign land and there organize he would come back into the United States and carry out the plan of organization and not be guilty of the violating of the Trust Act.

VARIOUS SCHEMES TO GET BY LAW

Zone fixing was attempted. Arrangements were made whereby rebates were given. Arrangements, whereby an amount that each manufacturer could sell was allotted; in the event of his over selling his allotment, he put into the treasury of the association a certain amount which was dis-

tributed to those members who undersold their allotment. All of these schemes were tried and eventually each one of them met with prosecution at the hands of the government. No doubt, therefore, the most paralyzing feature in the Trust Act was the shifting and uncertain interpretation given to the term "restraint of trade." In the prevailing opinion by Justice Peckham, as far back as the *Trans-Missouri* decision (1897), the term was taken to include all contracts. In the *Northern Securities* case Justice David A. Brewer, whose vote was the decisive one, said: "Congress did not intend to reach and destroy those minor contracts in partial restraint of trade which the long course of decision at common law had affirmed were reasonable and ought to be upheld. The purpose rather was to place a statutory prohibition with prescribed penalties and remedies, upon those contracts which were in direct restraint of trade, unreasonable and against public policy."

In the foregoing statement of the case we no doubt have the transition step from the earlier, and more literal interpretation to the broader reading of the spirit of the Act, as it first found expression in the *Standard Oil* decision (1911). There the common law distinction between reasonable and unreasonable restraint was first brought out. It was for the court to decide, Chief Justice White explained, whether any particular act fell within the class of prohibited things. And having classified the act complained of, it was also for it to decide "whether if the act is within these classes, its nature or effect causes it to be a restraint of trade."

If the restraint *did not unreasonably abridge* the freedom of trade or commerce and was not against public policy, then it was not contrary to the intentment of the statute. This is the "Rule of Reason."

KINDS OF UNFAIRNESS THAT STILL PREVAIL

The ability to render a superior merchandizing service under fair competitive conditions and without monopoly advantage—that is the criterion by which any new agency in large-scale enterprise must be tried in business. The earlier trusts played foul, and they too often made the rules of the game to suit themselves. Most of the more flagrant kinds of unfairness have meanwhile been given up. But there remain two or three varieties which are widely condemned as unsound in economics and ethics, if not in law as well. These are (1) unnatural price cutting; (2) discriminatory quantity price; (3) fraudulent advertising. Each of these may be considered from three standpoints. Is it good business for producer, for merchant, distributor and for the consumer to become party to a price-cutting program? Taking the community as a whole, Justice Holmes' dissent in the patent medicine decision of the United States Supreme Court would probably find wide acceptance. "I cannot believe," he insisted, "that in the long run the public will profit by this course, permitting knaves to cut reasonable prices for mere ulterior purposes of their own, and thus impair, if not destroy, the production and the sale of articles which it is assumed to be desirable that people should be able to get."

In deciding these questions the public is gradually taking the broader view—the view of enlightened self-interest. That kind of competition which tries to create business by unreasonable price-cutting is a species of fraudulent self-exploitation.

FEDERAL TRADE COMMISSION FAVORS ASSOCIATIONS

The time has now arrived when trade organizations are an established fact. Every class of industry has its trade organization.

The Federal Trade Commission recommended that each branch of the industry have a trade organization thru whom it can handle its affairs.

As a demonstration of the benefit that trade organizations

can give to the public we have only to consider the trade conditions which arose during the late war. It would have been impossible for the authorities at Washington to have handled the commerce of the United States without the aid of trade organizations. All of the large organizations were represented by their officers in Washington during the war, the smaller ones combining and having one representative for several. Thru this means, the War Board, and other government agencies, were able to accomplish the greatest activities in the manufacturing of supplies and the handling of the same in conjunction with war material. Without any delay authorities at Washington were able to know the capacity of the plants of any given manufacturing industry; the location of the plants; their shipping facilities and the result was that in the distribution of orders for war material the War Board was able to so distribute these requisitions that the best and quickest results could be obtained. They also were able to retard the business of these organizations which in any way delayed or hindered the work of the War Board and all of the war activities.

Take your own organization for instance, face brick was not an essential, but to manufacture face brick meant that it used man power and it used coal in large quantities. Man power was an absolute necessity not only for soldiers but for labor in the manufacturing of munitions. Coal was necessary to carry on the business of the manufacturing plants making munitions. Thru your organization the War Service Board practically closed down the entire business of the face brick manufacture and you all gladly cooperated, realizing that it was necessary for you to do so. When you go into the steel industry the opposite was the situation. Their production was speeded up. It was necessary for the government to know the location of every steel plant and its capacity. Its location was valuable from the shipping standpoint; its capacity, of course, in the amount that it could produce.

HOW TRADE ASSOCIATIONS AIDED IN WAR

Suppose the government had to spend time to gather together all this information, the delay would have been something enormous.

In the lumber line, certain grades and quality of lumber were needed for certain special lines. Take the aircraft division, they needed spruce. They did not need fir or cedar. Thru the Northwestern Lumber Association they were immediately put in touch with the place where the spruce could be obtained. The result was that at the time of the armistice, there were 20,000,000 feet of spruce cut, waiting for shipping orders to the various aircraft plants of the government. It was necessary during the war to fix a price on commodities. Representatives of trade organizations were called in consultation in conjunction with government officials and a price was fixed for the commodity of the particular line of each organization. This applied to brick, coal, ice, food of various kinds, lumber and practically everything of any importance was included, so that the government has come to recognize that trade organizations are a benefit and not a detriment to the country.

The Federal Trade Commission has just been seriously considering the proposition of performing the office of Secretary of the various trade organizations, and only when it found upon investigation the amount of labor involved in gathering all the information of the various trades, such as cost, selling price and general statistics of that character did it abandon the idea.

OBJECTIVES OF TRADE ORGANIZATIONS

Let us consider the objectives of these organizations of which you are members.

1st. How can these organizations be successful? By the extension and retention of membership. What good is a trade organization unless its membership includes the whole or at least the substantial concerns in that line of business.

2nd. Concerns join trade organizations for the benefit they will derive from such membership. We are all selfish, altho we may not care to admit it. But we must give if we are to receive, therefore, your organization is doing you a service by collecting and distributing market statistics. Is it not of value to you to know what the labor situation is in your line of industry? What the demands are, what the situation as to stocks on hand? This information can only be supplied when you furnish your proportion of it.

3rd. Stimulation of sub-organization work. You are always suspicious of the fellow you do not know, but when you meet him and get acquainted with him you find that he is not such a bad fellow after all. Your sub-organizations are the means of bringing all together and creating a spirit of good fellowship.

4th. Proper adjustments of freight rates. How far do you think you, as an individual would get with this problem if you tried it alone? The expense alone would stop you, but in your association you can see that this worry to your business is righted and that you are not being discriminated against.

5th. Installation of uniform cost finding system. Do you really realize what this means to you? Then on to the points from which it is important. You should know yourself what it cost you to produce your merchandise. If you know what it costs your competitor, and it is less than your cost, then you are either wasting in some place or he has some natural advantage over you. It is like the weather signal to the captain of a vessel. You must correct your method or you will not be in a position to meet competition.

6th. Stimulation of demand by a carefully conceived and efficiently conducted promotion campaign. To make the public want your merchandise, they must be led in the right way. To put it plainly, the successful operator makes the public *want his merchandise* in preference to the product of the other fellow. These are some of the advantages of cooperative competition. But let me again view the situation from the other angle, namely unfair practices, and see what the result will be.

RESULTS OF UNFAIR PRACTICE IN SELLING

Brandeis' reasoning seems to be sound on this score. "To sell a dollar watch (he argues) for sixty cents injures both the manufacturer and the regular dealer, because it tends to make the public believe that either the manufacturer's or the dealer's profits are exorbitant. Such a cut necessarily impairs the reputation of the article, and by impairing reputation lessens the demand." It takes only a few of such cut-sales to eliminate the regular dealers. Finding their market despoiled by quotations which means loss on every unit sold by them, they cancel their contracts with the manufacturer or jobber. Then the industry finds its demand weakened. The factory that was the life of the community shuts down—and all because the maker of a standard commodity is denied the inherent equity of seeing that his product, into which he has put his best service to society, is given safe conduct in its journey from factory to consumer.

Discriminatory quantity prices embody a practice quite distinct from the discounts, reductions, or other concessions made to all equally, to the wholesaler or jobber as compared with the retailer. Cost of carrying the stock includes warehousing charges, interest on money, and the like. Whoever

renders this service is entitled to the proper return, whether manufacturer or distributor. But beyond that lies what is called an inside price, lower to some than to others, the conditions of which are not open but secret, or within the reach of few enough to exclude competition. This is the discriminatory element, which Professor Paul H. Neystrom, of the University of Wisconsin, calls "The greatest evil in modern merchandising." His inquiries lead to the conclusion that the mail order houses are the chief exponents of this practice. Probably they would say that if they do not get that part of the output of a given factory at the price they offer they would have to build a factory of their own or buy a rival. Such kind of coercion, or competition, requires no threat to make it effective. But against this method of enforcing discriminatory trading the ordinary retailer is but a fly on the wheel. His remedy is to be sought in some form of legalized price protection recognizing the equity of the manufacturer in the marketing methods of his own trade-marked output.

MEANS OF OBTAINING FAIR ADVERTISING

Fraudulent advertising is a case in which the evils are curable mainly by outside pressure. Not all advertisers are liars, but too few of them handle the truth carefully enough to indicate any intent to avoid misleading the public. Fairness here is to be attained by three means; *cooperation by honest advertisers, good laws against misrepresentation and the vigilance of advertising association.*

Nor is the trust solution mainly a matter of schoolmaster's rules to insure good behavior. It is rather a question of the spirit of right management and just relations. A new wine is tingling in the veins of humanity, and it cannot but mean new bottles—new mentalities and new attitudes, as well as a new order under old legal forms. Neither combination nor competition need be regarded as an exhausted asset of industrial society. If by combination we secure the highest economy, efficiency and freedom in specific fields of public service, then let us promote it within recognized standards of fairness in costs and services. On the other hand, so long as competition tends, in the opinion of society, not only to utilize the aggregate, but also tends, on the whole, to make the price of different articles proportionate to the expense of producing them (Hadley), then let us proceed to emancipate that principle of private enterprise as part of the program of national policy.

Competition to serve its purpose and natural functions must be moralized. Each age must decide what these limits are. Faith in its complement—combination—has often been misplaced because of the general misconception of what true competition is. So much of what has passed as such lies outside of the truly economic, ethical or legal criteria of the genuine. Hence, it has come to be regarded as immoral and destructive in its purposes, and its essential characteristic of service has been obscured, but says Associate Justice Oliver Wendell Holmes: "True competition looks to the invention and introduction of more and more comprehensive ideas. It results in the upbuilding of emulation and cooperation and always, taking one period with another, to the furtherance of the general interest. The ordinary notion of competition takes account of numbers only. I regard the customary thinking here as a sort of atheism. Competition, rightly understood, is rivalry in the service of one's fellows. Men cannot compete save with reference to a common end."

As things stand now "Big Business" need not necessarily go. But it is on trial. If it is to stay, on what condition may it exist? On condition that corporate organization *develop a type of service in commercial, financial and industrial as well as in public utility fields, capable of appreciating and respecting the right of the public, both as consumer and*

investor, to have commodities and service supplied at reasonable prices and rates. The older right of exploitation must defer to the newer duty of service on fair terms. More and more it is coming to be recognized that the progress of society in wealth and welfare is due not alone nor even chiefly to any few men nor any class of interest. It is the joint resultant of the cooperation of all economic groups of the community working thru division of labor applied in special fields.

WHAT COOPERATIVE COMPETITION IS

Cooperative competition does not mean any illegal practice—any agreement to fix prices—any agreement to fix territory—any understanding to give illegal rebate—any arrangements to discriminate in an unfair way against competitors, but it does mean the getting together of men in the same line of business and by mutual exchange of information become educated whereby the best results can be obtained.

We are always protesting against waste. We do not hesitate to complain about extravagant methods of others, but we, a great many times, fail to take advantage of an opportunity which means the elimination of waste.

A business man that knows what it costs him to manufacture an article, is always prepared as against the manufacturer who does not know what it costs. The manufacturer who uses economic methods in his business is usually avoiding a waste, against the fellow who pays little attention to the way in which his product is manufactured. A man who ships his merchandise by the more direct route, simply by keeping himself up to date, is saving thousand of dollars in costs of transportation and it is only by a getting together and the exchange of information that men become educated to the highest point of efficiency in the conduct of their business.

Let us not go to that period where every man was afraid to tell his competitor how he shipped goods, how he manufactured; afraid to let a man inside of his shop for fear he would discover something which might be of advantage to his competitor, but rather let business men so cooperate together that *waste shall be eliminated, unfair competition shall be done away with* and each man will believe that his fellow competitor is honest, and that trade associations are conducted not for the benefit of a few, but for the good and benefit of all.



LOUISVILLE'S HOUSING SITUATION

THE HOUSING NEED is today serious in every section of the country, reports from cities all over the country showing a considerable shortage of homes, with poorer classes of residents being forced to double up in homes, live in garages, and in much undesirable property. The Chicago "Tribune" recently had an interesting article on the subject, prepared by a New York correspondent, which showed that every city of size in the country was suffering from lack of housing facilities.

In Louisville it is estimated that 5,000 homes could be used to advantage at the present time. C. M. Phillips, who was chairman of the "Buy Your Own Home Campaign," which was indefinitely postponed due to shortage of labor and material, and lateness of the opening of the movement, has spent years in the real estate business, as an officer of the Louisville Title Co., and a director of the Louisville Industrial Foundation. Mr. Phillips claims that Louisville needs 5,000 homes, principally three to five-room cottages or bungalows for workmen. He stated that the Industrial Foundation, the million-dollar industry getting organization of Louisville, has lost several opportunities to bring industries to the city due to shortage of housing facilities. One company would come to Louisville and bring 800 families or workmen with it, and secure 1,700 workmen in Louisville, if it could secure housing facilities for its experienced employees.

The secretary of the Louisville Real Estate Board claimed that he did not believe any such shortage existed, but he is not as well posted as Mr. Phillips. He called attention to the fact that there were about 2,000 vacant houses in Louisville at the beginning of the war. However, a considerable percentage of the number were very undesirable, in squalid districts, where a good workman would not live. However, they have practically all been occupied. The Industrial Foundation has secured tenants for practically every unused plant in Louisville and is at a standstill. Business property is almost fully occupied, and buildings of any kind are at a premium.

Rentals are up twenty-five to fifty per cent. over the pre-war basis in many instances, and there is a big shortage of

apartments, bungalows and better class property for middle class people as well as the workingman. During the war period Louisville grew rapidly, due to securing many new industries, and Camp Taylor, which has brought several hundred officers' families to Louisville. This camp is now permanent quarters for the first division of the regular army, and the officers will continue to live in Louisville.

CONSTRUCTION COSTS GREATLY INFLATED

A comparison of the volume of residence construction during the past three years, and the three previous years, shows that during the three big years of the war there were exactly 1,549 fewer residences constructed in Louisville than during the previous three years. In fact there were more residences constructed in 1913 than were constructed during the past three years. In 1913 there were 873 residences constructed, of which 51 were brick, costing \$1,967,010. During the past three years there were 812 residences constructed, of which 78 were brick, costing \$1,920,094. For the three years Louisville did not equal 1913 in either number of permits or value, altho on cost the construction for the past three years has been greatly inflated over the cost of 1913.

During the full year of 1918 only 37 residences were erected, totalling \$120,474. Of this number ten were of brick, and cost \$36,500. During the first nine months of 1919 there have been 239 permits issued for residences costing \$853,500. Of this number twelve are of brick, and cost \$80,000. A considerable portion of the permits for frame construction call for brick veneer buildings, which are listed under frame construction by the City Building Inspector. Therefore, brick has played a very important part in construction.

On actual figures of the past six years Louisville is shown to be 1,549 residences short of her average building campaign for the previous three years. At the same time considering the growth of the city the campaigns in 1913, 1914 and 1915 would not be sufficient to take care of this growth.

On general construction, including all permits for buildings erected in the city of Louisville, there has been a big slump during the past three years. Not since 1915 have

permits gone over \$3,000,000 (inflated value at that) whereas the normal volume prior to the war was \$4,000,000 to \$6,000,000 per year. Prior to 1912 there were several years in which construction went over \$6,000,000, but there was a slump just before the war due to over construction of office buildings. Today there is a shortage of offices.

Figures taken from the City Building Inspector's books show as follows:

FISCAL YEAR SEPT. 1, 1918 TO AUG. 31, 1919

	No. Permits	Est. Value
1918-19	1810	\$2,802,387
1917-18	1245	2,032,849
1916-17	1575	2,237,410
1915-16	2404	4,080,430
1914-15	2273	3,860,040
1913-14	2454	4,443,470
1912-13	2411	4,358,230

RESIDENCE CONSTRUCTION—CALENDAR YEAR

	Frame No. Permits	Value	Brick No. Permits	Value
1918	27	\$ 83,974	10	\$ 36,500
1917	145	307,450	30	95,500
1916	562	1,194,170	38	202,500
1915	628	1,327,720	82	235,000
1914	677	1,382,520	101	367,150
1913	822	1,650,560	51	316,450

YEAR 1919—9 MONTHS RESIDENCE PROPERTY

	Frame No. Permits	Value	Brick No. Permits	Value
Jan.	4	\$ 16,300	0	0
Feb.	7	21,400	0	0
March	21	46,800	0	0
April	31	80,150	1	\$ 3,000
May	46	148,500	1	5,000
June	41	132,400	6	52,000
July	26	114,600	0	0
Aug.	36	147,500	3	18,500
Sept.	18	64,850	1	1,500
Total	227	\$773,500	12	\$80,000

There is a tremendous amount of work in sight, one leading engineer reporting that he has work on his boards totalling more than \$3,500,000, while two other large engineers and architects have \$2,000,000 and \$3,000,000 each. Much of this work has been side-tracked indefinitely because of shortage of labor and material. High grade face brick are scarce and hard to secure. Labor is now more plentiful, but common labor is getting thirty-five cents an hour for an eight-hour day.

The coming year promises to be one of the biggest on record, whether prices slump or not, as things have reached a stage where building will have to be undertaken. The Kentucky High Cost Commission has recommended to the Louisville Board of Trade a plan similar to the St. Louis Chamber of Commerce plan. The Board of Trade is requested to raise a building fund of \$1,000,000 thru the Louisville Industrial Foundation or by borrowing from the banks, and use this fund in erecting three to five-room houses to be sold on easy payments at ten per cent. profit over actual cost. No action has been taken on this plan as yet. However, it shows the shortage in residence property. The Welfare League is planning a survey to show the actual shortage of residence property, and how residents are living in squalor and paying very high rentals for the privilege.

Louisville is only a city of about 300,000 inhabitants, but conditions here are similar to those all over the country. The 1919 season has been fairly good, but 1920 promises to be a hummer.



New York Doubles Previous Building Activity

Building construction continues active in the New York district. A number of interesting projects have developed during the past fortnight, with total valuation placed well into the millions. With the elimination of labor disturbances things are going forward in a very encouraging way;

reports from the offices of architects and engineers indicate that the winter will be an active one if the weather continues favorable. In the Bronx there is a good housing and industrial movement under way which bids fair to assume increasing proportions; in Brooklyn, housing work continues to be the big feature, and there is little slackening, if any, in this direction; the call for homes and apartments of all kinds holds strong, and realty interests are doing their best to meet this demand. In the Queens section, construction operations have reached a high water mark and are going forward with a vim; during the first ten months of the year no less than 8,753 plans have been filed for different structures, with estimated valuation placed at \$38,273,526. This total not only exceeds any previous entire year, but it is estimated that before the turn of 1920, the aggregate will round out approximately \$44,000,000 or about double the largest previous year, 1911, when the estimated valuation of plans filed was \$22,212,000. This gives an indication of the trend of affairs in the metropolitan district, and also, the encouraging outlook in local building circles for the New Year.



How Coal Famine Hit Refractories Plants

The coal famine has hit the refractories plants very seriously. The fire brick men saw, long ago, that the contention between the miners and the operators was coming to a serious pass, but they realized at the same time the futility of doing anything to counteract the effect it would certainly have upon the fire brick business. Coal could not be stored, because there is not the capacity for storage nor the proper facilities for economical rehandling. In this situation, the manufacturers, almost without exception, made up their minds that the situation had to be met, and conservatively dealt with. They recognized that the moment was most propitious from their standpoint. They have mostly rather good stocks and can weather a temporary shutdown without serious difficulty.

The steel strike has cut off much of the normal consumption, and, obviously it was better that, since the struggle is obvious, it should come at such a time, rather than when the stocks were low and the demand running heavy. The general feeling seems to be that the government faced a crisis when the coal strike began, and that it faced it resolutely and in the determined fashion in which any radical outbreak should be faced.

The depth of this feeling is indicated, perhaps most clearly, by the resolution of one fire brick man. He had a considerable stock of coal, and his plant was in a position to run without interruption. But when Dr. Garfield asked that manufacturing plants restrict themselves to three days a week, he announced his intention of complying with that order. "Any man who would not do so should be interned," he asserted.



Compelled to Adjust Wage Scale?

With the settlement of the coal strike, by giving miners a higher wage scale, manufacturers of face brick, tile and other clay products thru the Hocking Valley mining district are preparing to meet a higher wage scale on the part of their workers. It has always been a rule that the brick manufacturers must pay about the same scale as is paid to coal miners and with an advance to the miners, brick factories are compelled to advance their scales. It is figured as a result of this expected advance that prices of the finished product will have to be advanced from \$2 to \$4 per thousand if not more. Thus higher prices on all brick are in prospect.

GOODFELLOWSHIP PREVAILS

at NEW JERSEY MEETING

Clay Miners and Manufacturers Spend Profitable Evening in Perth Amboy Mixing Fun With Business

IT WAS AN EVENING long to be remembered—at least that's the opinion of those who assembled for the annual meeting of the New Jersey Clay Miners' & Manufacturers' Association at the Elks Club, Perth Amboy, Friday night, December 5. It was that happy mixture of business and fun that goes to make such a gathering worth while which permeated every corner of the large room. And then, all of the old familiar faces were there: men who have been responsible for the advancement of the clay industry in New Jersey, who have the welfare of this important trade at heart and who are now striving in various ways to open up the portals wide and let the world know of New Jersey's supremacy in the clay working fields.

August Staudt, a "real jiner" in organization work, had a big hand in the arrangements for the evening and all credit is due for the fine perfection in plans. Everything went off as anticipated—there was not a blemish or a "hitch" to mar the meeting. From the stroke of the gong which started things moving to the call for adjournment, the spirit of good, hearty fellowship prevailed. It wasn't just on the surface, either, but deep in the hearts of these active interests in local clay working and ceramic affairs.

The business and entertainment for the evening were preceded by an enjoyable dinner—a dinner worthy of the term "banquet," for everything was there from grape-fruit to after-dinner coffee and cake, and even including that rare commodity which we know as sugar. The table was arranged in U-shape in the entertainment hall of the club house; the room was decorated in an attractive way with the national colors, with large red, white and blue streamers floating here, there and everywhere.

INJECT FUN INTO MEETING

Close to fifty members and guests took their seats at the call of President McHose about 7:45 o'clock; about fifteen minutes after schedule time, to be sure, but who minded that? The dinner went off with dispatch, and before it was concluded, an excellent vaudeville program was started. Entertainers were secured from the Majestic Theater, opposite the Elks Club, and as the artists finished their regular performances they were escorted to the hall to repeat their acts for the clayworkers. This they did to a nicety and helped to promote the fun and enjoyment of the evening.

A report of this meeting would not be complete for the files of *Brick and Clay Record* without telling a few secrets, and the biggest among these is the way that some of these serious-minded ceramic men grasped the opportunity to dance with two of the fair damsels from across the way, who, following their regular professional act, offered their services to guide the initiated and uninitiated on the floor. Mr. McHose, Jr., Mr. Clare and even Fred Whitaker were tempted to respond, and they did themselves credit; Abel Hansen was almost tempted, but he said it "was too near home."

OFFICERS RE-ELECTED

Following the dinner, President McHose called the gathering to order, saying that while it seemed inopportune in the midst of the gayety to mention business, there were a few matters that must be handled, and among these the election of officers for the ensuing year.

Upon this word, Charles Bloomfield, chairman of the nominating committee, arose and said that this committee recommended the re-election of all officers for the coming year. He said that these men had acted faithfully and well in their different capacities, had the workings and the interests of the organization firm at heart, and that there was no reason, in the judgment of the nominating committee, why a change should be made. He asked Mr. Whitaker to put the motion for this re-election, and seconded by Mr. Hansen, it was carried unanimously. In addition to Mr. Bloomfield, head of the Bloomfield Clay Co., Metuchen, N. J., the nominating committee is composed of John Pfeiffer, of Henry Maurer & Sons, Maurer, N. J.; and F. F. Anness, Anness & Potter Clay Co., Woodbridge, N. J.

The vote for this re-election was taken despite repeated protests from President McHose, who said that he had held office long enough, that it was time he should give way to another and numerous other such remarks; but he was told to "sit down" and "keep quiet" with such vigorous acclaim from different parts of the room, that he bided by their wishes.

This re-election of officers includes L. H. McHose, McHose Clay Co., Perth Amboy, as president; F. R. Valentine, M. D. Valentine & Brother, Woodbridge, vice-president; August Staudt, head of the Perth Amboy Tile Works, Perth Amboy, treasurer; and M. M. McHose, McHose Clay Co., secretary.

GROWTH OF THE ORGANIZATION

In accepting the re-election to office, President McHose made a few appropriate remarks, mentioning his appreciation of the honor so accorded. He said that the association in its infancy a few years ago included only about 15 members and had grown to its present position of more than 50 members thru the honest and sincere efforts of those engaged in the local clay working field.

He pointed out that this growth indicated the possibilities in a real get-together movement where good fellowship was evidenced in the fullest sense, where each one really tried to help the other; to co-operate for individual and collective betterment. This, he said, meant to share in success just as it necessitated each to bear his measure of failure—but success, thanks to energetic labors, has been the predominating factor.

In concluding, he set forth that the motto of the organization truly had been what our leading statesman, the late Honorable Theodore Roosevelt, had termed "Give every man a square deal." The organization is bound to forge ahead and in this forward movement considerable

good for the industry, and those connected with it, is bound to ensue.

Mr. McHose's remarks were greeted with applause; he then called upon Mr. A. Clayton Clark, of the Raritan Copper Works, Perth Amboy, one of the guests of the evening, for a few words.

A LOCAL EMPLOYERS' ASSOCIATION

Following a few appreciative references for the hospitality of the evening, and his delight in being among those assembled, Mr. Clark made a number of pertinent references to the value of organization and association work. He said that immeasurable good could be accomplished thru collective and unified efforts, and that under modern conditions of business, movements of this kind were vitally needed.

He said that as the result of a number of meetings of prominent employers in the city, a local employers' association had been formed a few weeks ago, including all lines of industrial activity. With an initial membership of about 25, he expressed the desire that the new organization would grow to include every worth while industrial interest in the city, urging those assembled who might be employers of labor to investigate the possibilities of the work as now outlined. In explanation of the new movement, he said that the field of operation was wide; that it encompassed all matters pertaining to labor, such as wages, welfare, safety of employes, shop betterments and improved working conditions, and so on; it also proposes to become active in the matter of laws and regulations, using its efforts to see that right laws are passed both for the employer and the employe; and again, municipal betterment work and city improvements, where needed, will not be neglected and recommendations will be made to lend material aid in this direction.

In conclusion, Mr. Clark said that the field was wide and that those who had now banded together were well aware of this fact. Moreover, there is much to be accomplished and everything that the organization can do to assist the cause is just so much advantage gained for all concerned.

THE COUNTRY BOUND TO GO AHEAD

State Senator Thomas Brown, Middlesex County, was the next speaker and his remarks were listened to with careful attention. Senator Brown is far more business man than politician and he speaks with a broad knowledge of affairs.

In his opening remarks he touched upon the advantages of an organization of the character of the New Jersey Clay Miners' & Manufacturers' Association, and that set forth by the preceding speaker, Mr. Clark. He said that thru collective endeavors of this kind nothing but good, and real good, would be brought about for the individual, the company and the industry as a whole.

With reference to present conditions, he said that the past year had been a test of men, and that those who had kept their feet on the ground and their heads clear had been responsible for the strong position in which numerous industries now find themselves. He expressed the opinion that the country is bound to go ahead—business is bound to go ahead, and nothing can stop it despite the antagonism and inconsistency of the radical element, seeking by every power and means to disrupt the prosperity of the nation.

He said that in his opinion it was impossible and would be impossible to place the employer and the employe on the same level. Some men are born to lead, to instruct and point the way—and others are endowed with the sole inclination to follow. As long as human nature is of this status, and it will be so always, no law or laws, he set

forth, could be developed and passed to place such men on an equal footing. To work along this line was working for the impossible, to his way of thinking.

URGES BUSINESS MEN TO AID IN MAKING LAWS

The great commonwealth, he said, was sound at heart, just as the real leaders of the nation are sound and honest, and striving for the benefit of the people. In the making of state laws, with which he is so familiar, he remarked that the legislature, as a whole, does the best it can with the knowledge at hand. No doubt laws are made that should not be made, and on the other hand, possible laws not passed that should be. But it is up to the business man to help the members of the legislature while the actual framing of laws is in progress.

The employer and employe must understand each other. Production, advancement and progress cannot be obtained by strikes and disorders, and injunctions. He expressed the hope that New Jersey would soon pass laws compelling employers and employes to submit their grievances to a state board; that this board should be an impartial tribunal where justice would prevail, and which would eliminate the action of strikes and lock-outs. In this way, he pointed out, development would be brought about, and still bigger opportunities ensue. It would make for co-operation and co-ordination, and enforce a real meaning to these terms.

Before concluding his impressive talk, Senator Brown made mention of the keen activity now under way in connection with a new ceramic school at Rutgers College, New Brunswick, chronicled in recent issues of *Brick and Clay Record*. He said that the state budget was now being made up, and that he had approached Governor Runyon on this subject. Conditions looked favorable, in his opinion, for an appropriation to meet the immediate needs of this school. With the importance of the clay industry in the state he expressed the wish that those prominent in the industry would arrange for scholarships at the ceramic school within the reach of every deserving person.

In closing, he voiced the opinion that the clay working and ceramic industries had a bright future, a future that was nothing short of wonderful, considering the advancement made during the war period in the development of much needed articles heretofore imported from Germany and other countries.

His forceful and instructive speech was greeted with continued applause by those assembled.

WHO WILL GO TO TRENTON?

The last speaker of the evening was Charles A. Bloomfield, who made a few appropriate and impromptu remarks to supplement Senator Brown's talk. He spoke of the establishment of the present ceramic school at Rutgers College, with which he was directly concerned, and the long, hard, up-hill pull it had been to bring the institution even to its present state of perfection.

He urged those assembled to support the movement with heart and hand for the new building and improved facilities, saying that the efforts would be repaid many fold when the new school was an actual fact. New Jersey, with its wonderful clay resources, should not be handicapped in the matter of lack of proper facilities for the instruction of the younger generation—the men who would succeed those now "on the job."

In conclusion he asked how many of those present would be willing to be among the delegation to go to Trenton to present the matter to the members of the legislature at the proper time, and seventeen hands were raised in response to this call.

With the hour nearing eleven, further business was for-

gotten, and little get-together gatherings, mingled with dancing, fun and general frivolity rounded out the evening.

THOSE IN ATTENDANCE

The "high lights" of the ceramic industry in Middlesex County were out in good force at the gathering, as shown by the attendance record, which included the following: John Pfeiffer, Henry Maurer & Sons, Maurer; Professor George H. Brown, Director, Department of Ceramics, Rutgers College, New Brunswick; L. H. McHose, head of McHose Clay Co., Perth Amboy; A. Clayton Clark, Raritan Copper Works, Perth Amboy; Charles A. Bloomfield, head of the Bloomfield Clay Co., Metuchen; Charles W. Crane, C. W. Crane & Co., New York; August Staudt, head of the Perth Amboy Tile Works, Perth Amboy; Abel Hansen, head of the Fords Porcelain Works, Perth Amboy; State Senator Thomas Brown, Perth Amboy; Captain C. B. Cannar, Raritan Arsenal, Metuchen; J. T. Ryan and R. P. Grace, Mutton Hollow Fire Brick Co., Woodbridge; Victor W. Main, National Fire Proofing Co., Perth Amboy; L. E. Riddle, Jr., Metuchen; Henry F. Koch, Perth Amboy; Jack M. Klein, Perth Amboy; A. Ammann, Such Clay Co., South Amboy; R. H. Minton and Fred Whitaker, General Ceramics Co., Metuchen and Keasbey, respectively; Harry G. Dewender; R. W. Rue, South Amboy; William Stephenson, South Amboy; P. C. Buechner, Crossman Co., South Amboy; Frederic D. Hahn, C. W. Crane & Co., New York; E. C. Dalrymple, Raritan Ridge Clay Sand Co., Metuchen; F. F. Anness, Anness & Potter Clay Co., Woodbridge; W. G. Demarest, Metuchen; George Parsons, Perth Amboy; Otto W. Will, Roessler & Hasslacher Chemical Co., Perth Amboy; James J. Livingood, Jr.; James H. White, Perth Amboy; W. Guy Weaver, Perth Amboy; Linn Rossi, Perth Amboy; R. L. Clare, Federal Terra Cotta Co., Woodbridge; F. B. Aller, Perth Amboy; H. R. Valentine, M. D. Valentine & Brother, Woodbridge; M. M. McHose, McHose Clay Co., Perth Amboy; C. Von Hartz and F. W. Schmidt, Didier-March Co., Perth Amboy; M. F. Nagle; Samuel Reid; and LeRoy W. Allison, Eastern Editorial Representative, *Brick and Clay Record*.



Chicago Issues Record Amount of Permits

Permits for the construction of buildings to cost \$90,000,-000 have been issued by the City Building Department of Chicago, thus far this year. Ed. W. Nordlie, chief building inspector, estimated that in spite of the high cost of material, and the building strike last summer, this year's permits will surpass in the value of buildings to be constructed, those of 1916, when \$113,000,000 worth of permits were issued. 1916 was the largest year the department has seen. During the month of November permits were issued for 167 stores and factories, 527 residences and 36 apartment buildings. Other permits brought the cost of the buildings to be constructed up to \$17,577,000. For October the figure was \$16,948,000, for September \$13,483,000, and for August \$4,960,400.



National Thrift Week Begins Jan. 17

Keen interest on the part of the public in the projected plans for a National Thrift Week beginning January 17, 1920, has been evidenced in many ways already, the Savings Division of the Treasury Department announced recently. The purpose of the week will be the endeavor to start the country off in the New Year with a sound financial program for every individual and household. Two ends are sought; first, that the condition of the individual

be improved, and second, that the financial and industrial strength of the nation be increased by the great sums of capital which will accrue thru the practice of steady saving and safe investment on the part of citizens.

"The importance to the country of the practice of thrift and saving by the individual is not readily appreciable," said William Mather Lewis, director of the savings division, "until its results in the aggregate are summed up. While the country was buying twenty billion dollars' worth of Liberty Bonds, it also put away more than a billion dollars in War Savings Stamps, and savings bank deposits in this country also have increased some eight billion dollars during the years the world has been at war.

"The absorption of the Liberty Loans was due somewhat to extension of our national credit, but purchases of Savings Stamps and increases in bank deposits were almost wholly due to the wise preference of the individual for increasing his own and the country's capital account instead of using his funds in unnecessary spending.

"It is to bring to the attention of the country that it can, without sacrificing its pleasures or curtailing its comforts, add several billion dollars more to its capital account next year that plans for a National Thrift Week early in the year have been promulgated.

"Steady additions to the nation's capital are necessary if we are to take advantage of the trade and industrial opportunities that will keep us at our present full tide of prosperity. We must refrain from unnecessary and extravagant spending if we are to bring prices down. Having saved money, it is essential that the individual invest safely. To this end we urge continued investment in Government securities, on which steady and good interest returns are assured, with full return of principal.

"Savings Stamps and Treasury Savings Certificates will be available again next year at banks and postoffices, and Liberty Bonds may be purchased at or thru any banking institution."



Is the Railroad Question Eternal?

Word comes from "oldest inhabitant" that at no time in thirty years has interest in the railroad question been so general and so deep. The newspapers contain more letters than usual from "Old Timer," "Citizen" and "Pro Bono Publico," the writers conducting a quiz, rather than making an argument. They want to know what it is all about. Congressmen are overworked explaining to their constituents the several bills given to them for consideration.

The fact that more than thirty different plans of handling the railroad situation have been presented to Congress perhaps is the best evidence of the universal interest in the subject. Even the League of Nations failed to draw so many different schemes for its disposition. The multiplicity of railroad plans has caused confusion, and intensified the desire for information that really informs.

There is a good deal of difference between the various plans regarding the method of fixing wages and working conditions of railroad employes, and how controversies shall be adjusted. A majority of plans provide for Federal boards to handle the situation. All the suggestions offered are to the same end: To provide for working out such adjustments of labor difficulties that there will be no interruption of transportation service.



The Continental Pottery Co. has been incorporated at Roseville, Ohio, for \$25,000, by Joseph B. Foster, C. M. Foster, Willard L. Pace, Luther C. Pace and M. A. Pace.

REVIEWS TRIALS *met* SUCCESSFULLY *by* FACE BRICK MANUFACTURERS

*A Short, Snappy, To-the-Point Message to
Manufacturers in the Face Brick Industry*

By Frank W. Butterworth

*Past President of the A. F. B. A. and General Manager of the Western Brick Co., Danville, Ill.
Read at the French Lick Meeting, December 2, 1919*

THIS BEING a meeting of business men, for business purposes, it is not my intention to indulge in any oratory.

Various heads of departments will later explain in detail the activities of your Association. In passing, I merely wish to say that the following has been achieved since the Chicago meeting, in February:

The membership has been vastly increased.

Financial arrangements have been completed, assuring the association an income, for at least three years, sufficient to carry on all of its activities.

Competent legal advisors have been selected.

A powerful advertising campaign has been organized as to personnel, planned in detail, and is about ready for launching.

Arrangements have been made so that all division work is recorded by the association secretary.

Preliminaries have been arranged for a comprehensive system of cost exchanges, which will be of invaluable service to the industry and the public.

Adequate machinery has been set up to secure a revision of existing freight rates—to resist all future advances and to attempt the adjustment of discriminations.

A spirit of co-operation between dealers and manufacturers is being fostered, which should tend toward the up-lift of the industry.

Other activities, of lesser importance to both the public and our industry, have been started.

MANY PLANTS SUSPENDED OPERATIONS DURING WAR

Late in 1916 a few of the older heads in the business foresaw a period of violent change directly ahead—the European War, with its excessive demand for materials of all sorts, was beginning to affect all American industries—labor in many sections was expensive and difficult to secure—fuel was rapidly becoming so—the entrance of our own Country into this, the most disastrous of all wars, was becoming hourly more certain. What was in store for our industry was the momentous question.

In response to inquiries abroad, our Secretary secured the same reply from all countries with which he could communicate—war absolutely destroyed the face brick industry.

It was at this time, with its uncertainties and its impenetrable curtain of doubt, that the exchange of information as to market conditions was inaugurated, in order

that all plants, no matter how located, or what their connections were, might, as intelligently as possible, so conduct their affairs as to survive this period with the minimum of loss, consistent with the maximum of service to their country.

The early months of 1917 became a period of constantly increasing costs, accompanied by constantly decreasing demand—can any industry face a more difficult problem? Plant after plant gave up the struggle and closed for the duration of the war—those who continued operating, piled up huge stocks without any prospect of sale.

During the active hostilities this industry became practically extinct, rendered so by Government restrictions and lack of demand.

The years of 1917 and 1918 will long be remembered in the face brick industry, for they left many gray hairs as mementoes—the industry lost heavily and absolute bankruptcy was only avoided by most careful management.

POST WAR PERIOD ONE FULL OF UNCERTAINTIES

Following the signing of the armistice came a period of uncertainty more trying than that of actual war—Governmental restrictions were removed, but demand had not asserted itself. Those who resumed manufacture early in 1919 were gambling with big stakes. “Were costs to increase or decrease?” “Were we piling out stock at the peak cost and could that stock be sold at any price?” were some of the questions they were asking. Those who waited for the market to guide them, were carrying large overhead expenses without production to absorb them; also all units of the industry thru idleness—always much heavier than when operating.

It was not until June or July, 1919, that anyone could safely say the market was steady and that demand justified maximum production, which, we are proud to say, was attained as an industry in August.

The past three months have brought to this business the greatest demand in its history—all plants are sold far ahead—dealers are trying to increase their supply for next year—production was being crowded to the utmost—scarcely a day goes by but that some customer does not offer a premium over his contract price for early delivery—then the miners struck and shut off the fuel supply. What in H—l is going to happen next?

During the last three years this industry has played the entire gamut—rapidly increasing costs accompanied

by constantly decreasing demand—Governmental restrictions followed by practical extinction—months of uncertainty as to the resumption of demand—then a marvelous quickening to maximum production, with demand greatly exceeding the supply. Certainly the least of our worries has been the profits tax.

ASSOCIATION PLAYED AN IMPORTANT ROLE

Your association has played a large part during all these periods—it was the nucleus around which was built that organization which functioned under the direction of the War Industries Board for the regulation of the entire brick industry.

Your war service committee was repeatedly directed by federal officials to take any and every means to safeguard the remnants, in order that the skeleton of an industrial organization could be maintained.

The exchange of statistics and market information of all kinds had much to do with the preservation of this business, and the quickening of a dead industry.

Yet, thru all of these vicissitudes, this association has preserved inviolate its legal integrity—it has stood like a rock against all acts which would influence prices—curtail production or restrict the business area of a plant—its meetings have always been public and open to anyone interested.

Each and every member has cause to be grateful and proud of its acts—it deserves, and should receive, the thanks and praise of every community in which one of its units operate, and of the building public generally.

The industry for the manufacture and distribution of facing brick has a distinct service to perform and for that service each unit comprising it should receive adequate recompense—a portion of that service is to educate the public along the line of more permanent construction and that your association is finally in position to perform for you.

In starting its publicity campaign the American Face Brick Association will make its bow to the public, tastefully dressed in evening clothes—it requests you to arrange your affairs—to so conduct the unit for which you are responsible—that the industry may be constantly elevated and that this association can not be criticized for any of the acts of its members as to unreasonable price—as to quality—or as to service during delivery.

If any member of this association can not perform the service which his community has a right to expect, he must cheerfully consent to a revision of his methods, or expect nothing but decay.

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Market for Brick Machinery in Finland

While the recent war caused a decided lull in new building in all countries, one of the salient features of new work contemplated is reports being received in the United States from Finland. These reports are to the effect that no new brick works may be expected to be established until reconstruction is under full headway, and at this time it is a little too early to predict the possible market for brick-making machinery in Finland.

The demand may begin with material only for finishing purposes, with a market perhaps for machinery for roofing and other form brick. Modern transport arrangements for brick works might meet with a ready market.

The chief building materials in the larger towns and trade centers of Finland are red brick and cement. Of late, lime and brick have been commonly used and there are two modern brick works. Cement stones or blocks are also used,

but to no great extent. The common material is red brick, made in a great number of larger and smaller brickworks. Normally, the more important works produced about 40,000,000 brick annually. At present the supply is about exhausted. The war has caused a considerable diminution of output because of the complete cessation of building activity and the increased cost of fuel.

The clay is generally of fair quality. The larger works are provided with machinery, but all the smaller brickyards employ only hand labor. American brickmaking machinery has never been introduced in this country, the machines in use being of Swedish or Danish manufacture.

Naturally there is at present a shortage of labor, and because of food and living conditions many of the industrial workmen are employed as farm hands. Wages are exceedingly high.

But Finland must begin to build soon. The demand for houses is beyond all possibility of supply, and rents are enormous.

The duty on brickmaking machinery, according to the new tariff, is 10 per cent. of the value. The port and town dues amount to about 5 per cent. of the customs duty.

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The Ten Commandments of Trade

I

If thou hast aught to sell, go thy way and sell it. Keep thy tongue from evil speaking. Thou shalt not sing "Hymns of Hate."

II

Thou shalt speak good of thy wares, but thou shalt not decry the goods of thy competitor; for if ye destroy each other, what doth it profit thee?

III

Thou shalt ignore thy competitor, even as thou prayest to be ignored.

IV

Thou shalt not wash thy soiled garments in the temple of trade, for in so doing thou deprivest the laundryman of much business.

V

Thou shalt not lie about thy competitor's wares, lest he prove to be a more plausible liar than thou.

VI

Thou shalt be a gentleman if thou canst; if thou canst not, thou shalt exert thyself to give a plausible imitation.

VII

By the merits of thy wares thou shalt sell them. If thy tongue rejoiceth in slander, leave thy trade and go into politics.

VIII

If thou wouldst sell thy goods, thou shalt advertise; and thou shalt pay the gold for it.

IX

Thou shalt not deceive thy customer. Thou shalt not fill his belly with strong drink. For the wine fadeth away, but the memory of the next day lingereth.

X

Thou shalt be rewarded according to thy merits; the sins of thy competitor shall avail thee nothing; for what thou decriest as faults may be virtues, which make thee envious.—*The Lumber Co-Operator.*

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The American Magnesite Co., of Pasadena, Cal., has applied for dissolution.

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products Such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

IMPORTANT CERAMIC INVESTIGATIONS BEING MADE AT EXPERIMENT STATION



NOT MANY MEN ENGAGED in clay working operations have a full realization of the important work that is being done by the Ceramic Experiment Station of the United States Bureau of Mines at Columbus, Ohio, in the investigation of clays and other materials of direct interest to the ceramic industry. This station is one of twelve which have been established by the Government at various mining and metallurgical centers thruout the country. Some stations are necessarily doing work parallel or similar in nature, altho quite different in detail. Altho the United States Bureau of Standards has also a de-

partment devoted to the special problem of ceramics, the work of the Columbus station is in a different field. Friendly ceramic cooperation exists between the two bureaus and in no case is there a duplication of activity.

The Columbus station was established during 1917 and was located at Columbus for the following main reasons: Ohio is the leading clay products state in the Union, its annual output being more than twenty-two per cent. of the entire valuation of the nation's annual output; Columbus is the approximate center of the ceramic industries; Ohio State University established the first ceramic engineering school in the United States, it has its ceramic traditions and is broadly known; the university entered into an agreement whereby it proposed to supply the Bureau of Mines with adequate rooms for offices and laboratories, to supply heat, light, power and janitor service free and to provide laboratory furniture and other fixtures, and to loan to the Ceramic Experiment Station, the use of equipment consisting of kilns, crushing machinery and other apparatus.

EQUIPMENT OF CERAMIC STATION

An addition was built to Lord Hall to supply the ceramic experiment station with the necessary space for laboratories, offices, and so forth, which altogether occupy fourteen rooms. One of the rooms holds the microscopic laboratory, the main apparatus in which is a petrographic microscope and a refractometer. A chemical laboratory containing the usual accompanying equipment occupies one room. In another room is the electric furnace laboratory. Part of its equipment is a



R. T. Stull, Who Is in Charge of the Ceramic Experiment Station at Columbus, Seated Comfortably in His Spacious Office.



Here's the "Gang" Who Help R. T. Stull Solve Various Knotty Problems in Ceramics.

coefficient of expansion platinum resistance furnace and a nichrome resistance muffle furnace. A department for crushing machinery is also provided for. Jaw crushers, pulverizers and dry pans are a part of the equipment of this section. A laboratory for making and testing crude clay ware such as structural products like brick and hollow tile, occupies another space. Then there is a fine grinding department in which are located ball mills and blungers. The brick machinery laboratory contains a dry pan which by changing the plates is also used as a wet pan, and pug mill, brick machine, lathe, drill press, and so forth.

The kiln room equipment consists of a furnace of special design and a gas fired semi-muffle down-draft regenerative kiln, a fifteen foot coal fired down-draft kiln, and a two tunnel brick dryer. Another room is devoted to a general testing laboratory and one for doing drafting and calculating as well as holding bi-weekly conferences in. Then too, there is the dark room in which photographic and microscopic work is executed. Besides the above there are three rooms in which are located the general offices of the station.

The chief problems studied by the experiment station are those pertaining to the mining, refining and utilization of ceramic raw materials, the investigation of industrial problems with a view toward reducing the cost of manufacture and to improve the quality of products. It has also to do with the elimination of waste, and the safe-guarding of the health of ceramic workmen. Furthermore, it is authorized to cooperate with the different government bureaus, with the different states and with the industries. Clays are being tested for the government land offices, for the Indian schools and for the United States Geological Survey. A cooperative agreement has been made with the Geological Survey of Ohio for investigating the clays of that state.

FIRE BRICK TESTS MADE

Part of the work under investigation by the ceramic experiment station is tests on different brands of fire brick for malleable iron works. In conjunction with these tests, some of the same type of brick are being examined under actual conditions at the plant of the Ohio Malleable Iron Co., which is cooperating on this investigation. It is the purpose to compare laboratory tests with those obtained in general practice.

Much work has already been done by this bureau on dolomite and magnesite brick tests. Extensive research was undertaken to find a method of making dolomite brick that would enable it to be manufactured commercially. By using an Ohio dolomite, it was found possible to make a brick that would not slake seriously within six months after it was made.

In connection with the work done on refractories, spalling tests were made on twelve different grades of brick. This work was done in connection with the work undertaken by the American Society for Testing Materials. Among the things noted in these tests was that the slag surface had different effects on the spalling tests.

An interesting experiment was made recently by taking the screenings obtained from the purification of southern kaolins, and making brick from them. The screenings, of course, are mainly quartz particles, and a lime bone was used such as in the manufacture of silica brick. It was found upon investigation that this brick tested as good as any No. 1 refractory silica brick.

The ceramic experiment station has also on hand about sixty-five samples of coal measure clays obtained from various parts of the state of Ohio. These samples were gathered by Wilbur Stout of the Ohio State Geological Survey, and tests are being made of them in cooperation with the state. The tests consists of determining the burning properties as well as the suitability for refractories or building material.

COMPREHENSIVE KAOLIN INVESTIGATION UNDER WAY

About seventy-five different specimens of white clays both crude and washed were sampled by Professor A. S. Watts, in Georgia, the Carolinas, Pennsylvania and New Jersey, and last summer about twenty-two more samples were obtained in Tennessee and Mississippi. These specimens in addition to four samples sent in by producers in Florida, are now being subjected to a series of tests called "Kaolin Investigation" because ninety per cent. of the clays may be classed as "Kaolins."

The tests include the determinations of the amount of tempering water required, drying shrinkage by volume, dry color, burned color at temperatures corresponding to cone 8, 10, 12, 14 and 16, porosity and volume changes at temperatures corresponding to the above cases, fineness of grain

by elutriation and screening, sodium hydroxide required for deflocculation of clays passed thru 120 mesh screen, microscopic examination of elutriated fractions for physical and mineral structure, and fusion tests.

Besides the above tests the clays are to be incorporated in porcelain bodies containing as their ingredients, kaolin, ball clay, spar and flint. These bodies will then be tested for dry strength using five and seven inch bars, drying shrinkage, porosity and volume changes at temperatures corresponding to cones 8, 10, 12, 14 and 15, using three and one-half inch bars, burned strength at temperatures corresponding to the same cones indicated above with the addition of cone 20, using seven inch bars and color and translucency at temperatures corresponding to cones 8, 10, 12 and 14.

PURPOSE OF WHITE CLAY TESTS

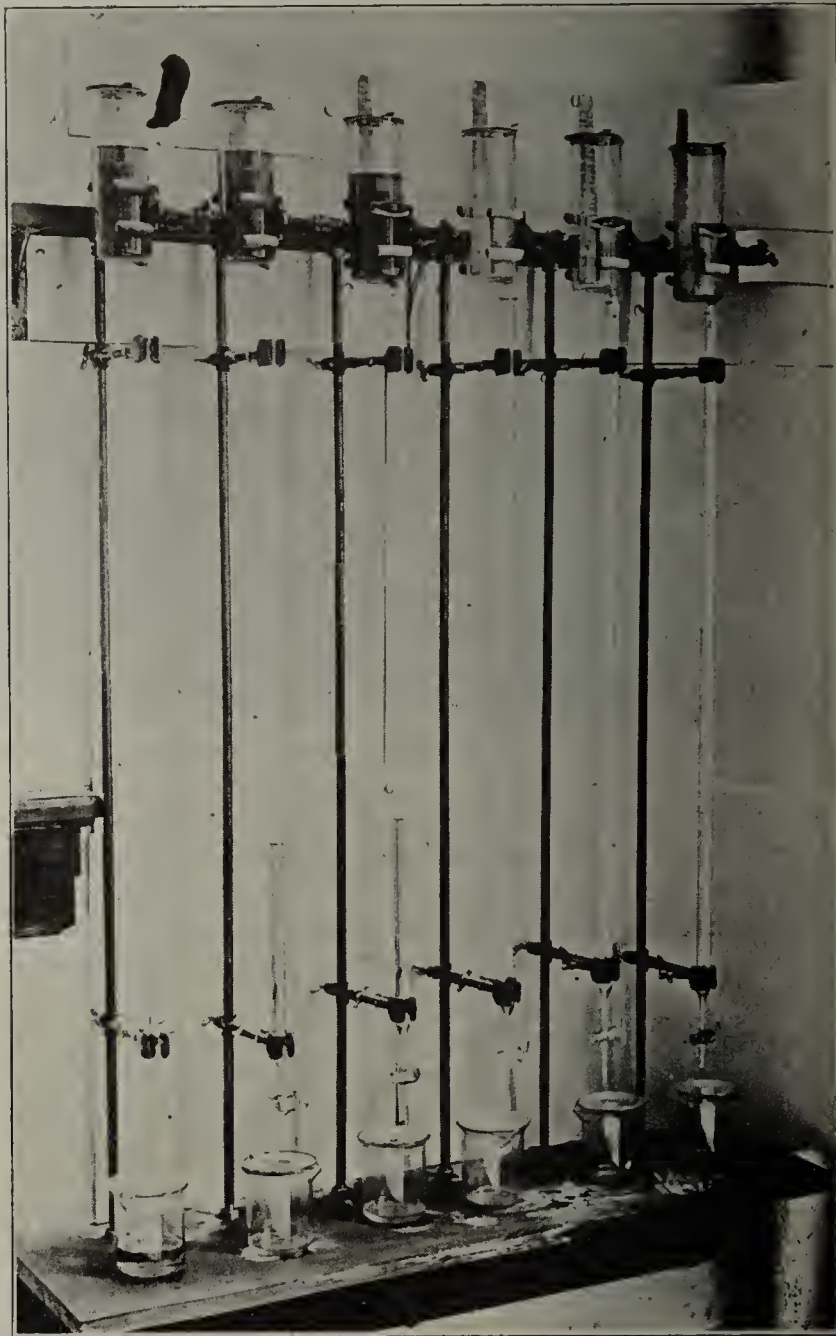
These tests are being made for the main purpose of classifying the kaolins according to their important properties and uses to which they are and may be put. It is hoped that this complete investigation will enable the potter to know what clays he might use to advantage in his body and it also may help to do away with the use of English clays. One investigator will take up the investigation of four or five of the properties in one laboratory under the same conditions. This will aid in getting more uniform testing conditions and make the results easier to compare with reliability.

As a result of some of the experimental work that has already been carried on along the lines planned as mentioned above, the following data has been obtained from the elutriation tests made on some of the clays. It was found that Georgia kaolins contained seventy to eighty-five per cent. of clay substance. That means that this per cent. of the clay was made up of particles less than one one-hundredth millimeter in diameter. South Carolina kaolins contain only fifteen to thirty per cent. clay substance and Pennsylvania, fifty-five per cent.

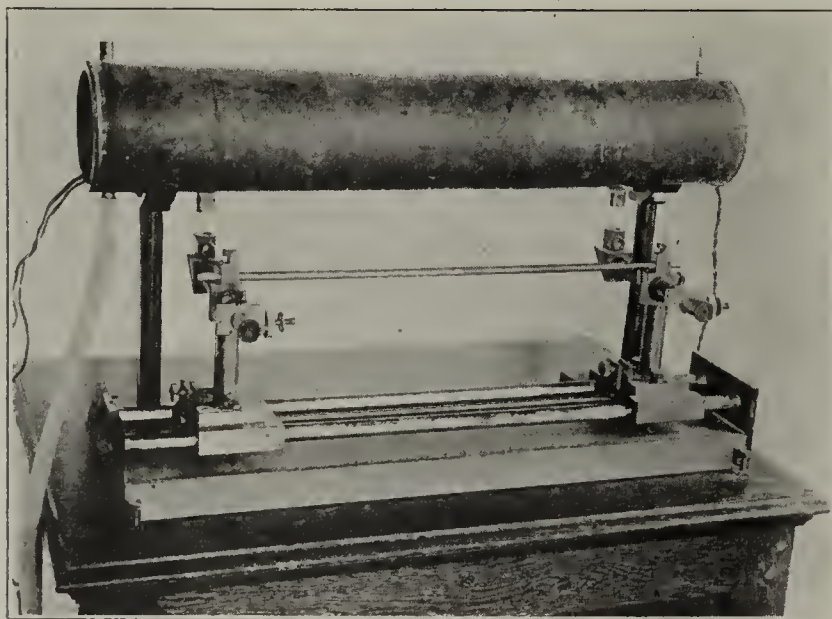
In addition to the tests on the above white clays, samples obtained by the United States Geological Survey are being examined in conjunction with the other clays.

The station plans to make chemical porcelain in addition

twenty bond clays have been made to find their suitability for brass melting. Five crucibles of each clay have also been made for steel melting purposes, and have been sub-



An Ingenious Mounting of Burettes and Volumenometers for Determining Volumes of Test Pieces. This Arrangement Permits Speedy Operation with a Good Degree of Accuracy.



Part of Equipment in Use in the Laboratories of the Ceramic Experiment Station.

to pyrometer tubes such as are required for the other experiment stations of the Bureau of Mines.

SUBSTITUTE AMERICAN CLAYS FOUND

Since the Pittsburg meeting of the American Ceramic Society, Professor Stull has been carrying on work on graphite crucibles. Tests on nine crucibles made up from each of

jected to tests under actual steel foundry practice. The crucibles were tested in two large foundries under supervision of three representatives of the experiment station who kept accurate records of the performance of each crucible. The purpose in mind in doing this was to gain an idea as to how to correlate experiments made in the laboratory with results obtained in actual practice, using the various bond clays.

As a result of experiments made on domestic crucible clays and graphites, it has been demonstrated that it is possible to make high grade crucibles from American clays and graphites. The ceramic experiment station has found at least one or two American bond clays that are as good as the German Klingenberg clay for brass melting crucibles, and more than a dozen native clays that are better than the Klingenberg clay in steel melting crucibles.

The supervision of the ceramic experiment station at Columbus, is under the direction of R. T. Stull, who is well known among ceramists and clay workers. His title is Chief Ceramist of the United States Bureau of Mines and Superintendent of the Ceramic Experiment Station. The personnel of his staff includes J. A. Rinehart, chief clerk; L. E. Geyer, clerk; M. C. Booze, ceramic engineer; H. G. Schurecht, ceramic chemist; R. N. Long, assistant ceramic

chemist; H. W. Douda and R. T. Watkins, ceramic assistants and D. H. Dawson, unskilled laborer. Besides the above men, Professor A. S. Watts of the department of ceramic engineering, Ohio State University, gives part of his time as quarry technologist, and W. J. McCaughey of the university gives some of his time as microscopic mineralogist.

* * *

Gas Shortage Looms Up Again

The shortage of fuel, both of gas and coal, has caused a situation in the generalware potteries that will seriously handicap the output. For several days during the first week in the month not a kiln was lighted in the East Liverpool, O., district, and on the third day the Manufacturers Light & Heat Co. gave its permission to light ten kilns, this small number to be "evenly distributed" among twenty-five potteries. Just how the distribution was to be made was not explained.

The loss in production during this fuel shortage period was the heaviest the pottery manufacturers experienced since the severe winter of 1917-1918. This production loss will soon be felt by the buyers of pottery as the delay occasioned cannot be caught up.

Announcement has been made by the Manufacturers Light & Heat Co. that within a few weeks it will have a large service line laid to the new McKeesport, Pa., gas field and that with this additional supply the company would be in better position to furnish an increased supply of gas to the pottery manufacturers.

On account of the heavy demand for American pottery, the loss in kiln production due to the gas shortage will be felt keenly among all classes of buyers, who admit they are in urgent need of merchandise. Those pottery plants using coal for kiln fuel have been unable to obtain a sufficient supply to insure the firing of kilns in regular schedule order. This is due to the strike of the miners. In the East Liverpool district this coal shortage is not being felt as keenly as it is in the Sebring and East Palestine, O., districts where coal is practically the exclusive fuel. In the Wheeling, W. Va., district the gas shortage has not been as acute as in other pottery sections. Electric porcelain manufacturing plants have felt the gas and coal shortage in the same manner as have the generalware manufacturers. Their production has also declined on account of being unable to fire off kilns on usual schedules.

The general volume of business that is being received by generalware pottery manufacturers for next year delivery is generally admitted to be the heaviest the manufacturers ever experienced at this season of the year. The most pleasing feature of this heavy demand for merchandise is found in the fact that the demand is running strongly to the highest priced dinnerware the manufacturers have to market. While an active demand prevails at all times for the more popular priced patterns, the best business done in all plants this season has been on the more costly patterns. The advance orders for all lines is such that manufacturers are being crowded for the first six months of the new year. All that is required now is production, as it is pointed out that an increased output is essential to take care of the trade that is being offered.

The active buying season of the year is always in January, and present indications point to the fact that the volume of future business that will be placed by buyers when they visit the various markets next month will top all previous records, in so far as valuation is concerned. It is known now that some Eastern Ohio pottery

plants have orders on file for August, 1920, delivery, and there is a host of business booked for June and July delivery. The trend among buyers now is to anticipate requirements as far ahead as possible, this in the hope that deliveries will be obtained at the time when the merchandise is wanted. More unfilled business will be carried over by the generalware pottery manufacturers into the new year than has been the rule. Unfilled business at the close of 1918 was unusually heavy, but that for 1919 will exceed the volume of last December.

With this heavy volume of unfilled orders to start business in January, 1920, and a heavy amount of January delivery orders already in hand, to say nothing of that which will be placed by the buyers in January, the manufacturers will have their hands full, and workers are insured of an active year. Should the pottery manufacturers obtain maximum production in 1920, the payrolls will be the largest in the history of the trade.

Shipments in November from the eastern Ohio district were more than for October and exceeded the record months of 1918.

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And With Chinaware at Present Figures!

There is a little poem going the rounds of the ceramic men of New Jersey which not only carries its individual humor and interest, but gives a brief sidelight on names of famous chinaware that some of us are apt to forget under the exigencies of modern production. This poem, reproduced below, was "picked up" by Charles A. Bloomfield, Metuchen, N. J., who has passed it along among the chinaware men—and so it reaches *Brick and Clay Record*. It is well worth reading.

CHANSON PATHETIQUE

Bill Prink was a collector of china rich and rare;
He had gathered gobs of dishes from almost everywhere;
To stocking up his cabinets he'd devoted all his life,
But, unhappily, Bill didn't hit it off well with his wife.
He had fancy cups and saucers by the score on every shelf;
He had Sévres and Bonn and Wedgwood, Copenhagen ware and Delft;
But his wife was fond of dresses and she couldn't wear a dish;
So one day she had a row with Bill and called him a poor fish.
One word led to another till the china came in play,
And then she heard her husband softly say:

Do not bean me, darling, with the Royal Doulton plate.
Pick one less extravagant to bounce upon my pate.
I didn't mean to hit yer
When I grabbed the Dresden pitcher;
I only meant to crown you as my queen—see what I mean?
Save the precious porcelain and buy a gingham gown;
Only use the Ironstone to manicure my crown.
I'll trade the Pekin vases for a Georgette frock, dear Kate;
Do not bean me, darling, with the Royal Doulton plate.

The air was full of Tiffany, Satsuma, Cloisonné;
The Coalport and the Lowestoft collided in the fray;
Poor Bill received the Rookwood saucers mostly in the ear,
And he fired back Majolica that cost him much less dear.
His temperamental lady hurled the Canton sugar bowl,
And from William's nose it deftly shaved an ornamental mole.
The answer came in Haviland, in Chelsea and Belique,
The last of which caught Katherine quite fairly on the beak.
The dish collector faltered when she seized a Worcester tray,
And to his wife pathetically did say:

Do not jog me, deary, with the Capo di Monte jar;
Choose the Kaga creamer; it's less costly, love, by far.
Modern warfare is intensive,
And Limoges is quite expensive;
Save the old Crown Derby, just for luck, my precious duck!
I'll sell the Swansea soup tureen, the Mandarin teapot, too;
I'll sacrifice the Bristol, just to buy a robe for you;
I'll quit collecting dishes—I'm resigned unto my fate—
Do not bean me, darling, with the Royal Doulton plate.

* * *

Last Idle Plant to Be Operated

The only idle clay working plant in the East Liverpool, O., district is soon to be placed in operation. This is to be made possible thru the recent purchase by John W. Boch and associates of the two kiln electric porcelain plant at Newell, W. Va., formerly owned and operated

by the Novelty Clay Forming Co. The latter concern was unable to increase its operating capacity at Newell and removed to East Palestine, O., where it took over the former plant of the Ohio China Co. Mr. Boch has been operating a moderate sized electric porcelain plant in Newell, and the additional kilns will be an increase to his present holdings. There is not another clay working plant in the Upper Ohio valley that is on the inactive list.

Trenton Ceramic Plants Quite Active

Pottery and ceramic production continues at top speed at Trenton, N. J., and the outlook in the matter of increasing orders is very encouraging. On the other hand, however, a distressing factor has come about in connection with fuel, and the situation in this respect seems destined to necessitate decreased operations unless sufficient supplies of coal are received thru the local fuel administrator. Some of the potteries have a supply which may last for a month to six weeks and more, while others are handicapped with much depleted resources in this respect. Plants of all kinds are active; these include the sanitary ware factories, the chinaware potteries, and the different porcelain works, and up to the present time availability of good experienced labor has been the only handicap in reaching normal output. The year 1920 bids fair to be a banner period in the history of local potteries, with operating conditions at the right status.

Ruling as to Tax on Art Porcelains

The Internal Revenue Department, Washington, D. C., thru Commissioner Roper, has issued a ruling that porcelain products which are duplicated by the manufacturer in commercial quantities wholly or chiefly by the regular mechanical processes of manufacture, are not subject to tax as "art porcelains." It is held that the term "art porcelains" shall not be understood to include such articles as are in the nature of material, work, or labor furnished in connection with the erection of a building, and which form a part thereof; tableware, or other articles designed for a primarily useful purpose. Articles of porcelain character shall not be deemed duplicated in commercial quantity if they are ordinarily sold by the manufacturer in quantities of less than a dozen.

Secretary of Pottery Plant Resigns

George E. Hoffman, secretary of the Monument Pottery Co., Trenton, N. J., has resigned. Mr. Hoffman has been connected with the company for sixteen years, having become manager of the plant in 1916, and a year later appointed secretary. It is said that he has been offered positions at Trenton and at other places, but that he will not become permanently associated with any concern until after January 1. At the Monument plant it has been announced that no one will be named to succeed Mr. Hoffman at the present time.

Hall China Co. Purchases Plant

No announcement has been made as to where the Davidson-Stevenson Electric Porcelain Co. will operate after it gives up possession of that part of the Goodwin Pottery Co.'s plant which it has been using for a number of years. The Goodwin property was recently purchased outright by the Hall China Co., of East Liverpool, and the latter company will use the eight kilns of that plant in addition to the kilns it is now operating in the manufacturing of vitreous fireproof china products.

Pottery Men Seek Increase in Wages

Sanitary pressers employed at about sixteen of the different plants at Trenton, N. J., and aggregating in local organization about 800 men, have been holding a series of meetings preliminary to making a demand for an increase over the existing schedule of wages. The Executive Committee of the Trenton organization proposes to announce the findings at an early date; it is said that an advance of about ten per cent. will be asked.

Dances Included in Pottery Welfare Work

In connection with employee welfare work at the plant of the Thomas Maddock's Sons Co., Trenton N. J., arrangements have been made for a series of weekly dances to be held each Friday evening. The dances are being given in the lunchroom at the pottery, with attendance aggregating about 150 couples.

Plants to Hold Annual Meetings

Annual meetings of all pottery corporations in the Eastern Ohio district will be held early in January but the prediction is made that few if any changes will be made in either the various boards of directors or officers of any pottery concerns. The shares of these concerns are closely held and it has generally followed that the same officers are continued from year to year.

Construction of Greensburg Plant Held Up

Inability to obtain a sufficient supply of material has caused more or less delay in the construction of the foundations of the new plant at Greensburg, Pa., of the Pittsburgh-American China Co. The car shortage and the short fuel supply available for brick burning is given as the cause of non-delivery of materials.

Introduces New Feature With Terra Cotta

Frank Costello, president of the California Pottery Co. of San Francisco, Oakland and Fresno has announced a production at his plant which is said to be an innovation for the Pacific Coast. It is a "stock" facade for buildings, developed in terra cotta in a variety of popular styles, which enables a builder to purchase the front of his building ready made at a considerable reduction in price from the old method. Mr. Costello states that the interest already shown by the builders is an indication that the idea fills a long-felt want.

Study Washington Clay Deposits

Hewitt Wilson, head of the ceramic department of the University of Washington, together with Seldon L. Glover, of the State Geological Survey, and Fred T. Heath, a senior at the university, all of Seattle, are making a tour over the state to study the ceramic industry. They are inspecting the clay deposits in the different districts in various parts of the state.



The new porcelain works of the Mitchell-Bissell Co., Trenton, N. J., to be located on Brunswick Avenue, Trenton, as noted in the November 4 issue of *Brick and Clay Record*, will comprise two one-story fireproof buildings, with estimated cost of about \$50,000. Ground has been broken for the new plant, and construction will be rushed to completion. The factory will be fully equipped for the manufacture of various high-grade porcelain specialties, including thread guides and other textile porcelain products.

The SUPERINTENDENT

Helpful Hints for Practical Men Whose Problem is Maximum Production With Minimum Cost

Some Information On Oil Firing

Owing to the present coal shortage, several plants have recently changed over to the use of oil in burning, and a large number are studying the situation and seriously considering the installation of oil burning methods. For the aid of these people, we give below a brief review of some of the important factors to be judged before installing oil burning equipment.

First: Possible supply and means of transportation. For a long time the steady supply of fuel oil has been unreliable. Tank car shortages have occurred causing serious delays. To overcome this it is necessary to have a storage tank or reservoir. However, in most cases the cost of this tank is considerable and there is a strong temptation to make it as small as possible and then worry and hope that the car supply will be regular enough to prevent a shortage. These conditions obtained during the war period and previous but it has been claimed that fuel oil has been plentiful during the past year and no trouble experienced with getting a satisfactory supply. If the manufacturer can get a guarantee of a continuous supply he will dispose of one of the greatest objections to the use of fuel oil.

Second: In general, the equivalent of oil in terms of coal is from three and one-half to four barrels per ton. Where the same degree of efficiency is used in burning both fuels, coal at \$3.50 is approximately equivalent to oil at \$1.30 a barrel. By knowing the exact heat value of the coal now in use and the heat value of the oil to be used, it is easy to determine the relative cost in terms B. t. u. of coal and oil.

Third: Another item which must be considered is that of equipment. The use of fuel oil means a considerable investment for storage, pumping, distribution pipes, burners, atomizing agents, and so on. The atomizing agents may be either air or steam, but in either event will require more boiler capacity and power than is used when coal is being burned. Under present prices for materials, it will cost approximately \$6,000 to equip a plant containing fifteen round down-draft kilns and providing for sufficient storage to assure a factory of an interrupted supply.

A fourth point is in regard to labor. The comparison varies widely, and it is difficult to make a general statement. The labor for oil in firing is much less than for coal firing, and the quality of work is so much better that it is possible to get higher grade men for handling oil than coal in small plants. In general, one man will take care of an eighteen kiln plant at night; and a burner and helper in the day time; the helper to take care of cleaning burners, tearing out wickets during cooling, and so forth. When three shifts are the practice, one more man is required for the third shift. The labor cost of handling coal is greater than the labor cost of handling oil, but the cost of pumping and atomizing oil is higher than is generally thought to be the case.

The percentage of No. 1 ware, its quality, and the speed at which the kilns may be turned over, are points very much

in favor of oil. They do a great deal toward counterbalancing the high cost of installation. When oil is being considered for an old plant the increased production of the kilns should be considered, especially if the rest of the plant is of sufficient size. If, however, the kiln capacity was previously larger than the shop, this point would not be of as great importance.

To sum up the advantages of oil over coal, it may be stated that:

1. It possesses the possibilities of a long flame and is unprotected by producer gas in this respect.
2. It is capable of developing an intensely hot fire, which allows quicker heating up of a furnace and kiln. This advantage is of special value in quickening the schedules of burning and saving time in kiln turn overs; and, since the coal consumption on a kiln is nearly directly proportioned to the length of burn, it is possible for some wares to nearly equalize the difference in price of the fuel by overcoming the lags in temperature due to the periodic hand firing of the coal. This advantage of an intense heat has also proven of great value in salt glazing of brick and hollow ware.
3. There is no cleaning of fires, no handling of fuel, no removal of ashes, no soot, and no dust. The first of these makes the procuring of labor much easier and where kilns are located closely together or congested in buildings, the cost of getting coal to the kilns and removing the ashes assumes such proportion that it almost offsets the economy produced in the purchase of the cheaper fuel. In cities where smoking ordinances are troublesome, and ash removal expense a large item, fuel oil can be substituted for oil with very good results.
4. On plants of ordinary size, the oil system will reduce the number of men employed in burning in the ratio of seven to two.
5. Oil can be stored in fifty per cent. of the space required for coal.
6. Burning stages and temperatures are very easily controlled, and a decidedly more constant rise of temperature is possible with oil than with coal, the different stages of the burning are handled with much greater ease, alternate oxidizing and reducing conditions can be produced at will and easily controlled.
7. Unfortunately, because of the better control of firing and the steady progressive rise in temperature, without the periodic lag of more fire, a higher percentage of number one ware is obtained by the intelligent use of oil as compared with coal.

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Store Your Wire Rope in a Dry Place

If your wire rope is to be idle during the winter, you will get much better service from it next year if it is stored in a dry place and also thoroly coated with a good wire rope lubricant or protector. To permit wire rope to lie outside in the open all winter long where it would be affected by the elements would cause it to deteriorate considerably.

IN *the* WAKE *of the* NEWS

Being a Brief Mention of a Host of Interesting Happenings in the Varied Fields of the Clayworking Industry

A. P. Green Boomed for Governor

At a banquet given recently by the A. P. Green Fire Brick Co., of Mexico, Mo., for the Round Table Club of Columbia, Mo., A. P. Green, president of the above concern, was boomed for the nomination of governor by former United States Senator X. P. Wilfley. Among the notables present at this banquet were: Ex-Speaker Champ Clark; Governor F. D. Gardner; Dean Walter Williams of the Missouri University, and president of the International Journalists' Association; Omar D. Gray, state coal and oil inspector; Ex-Senator Wilfley, of St. Louis; Jackson Johnson, president of the International Shoe Co., of St. Louis, and others.

Climbing Down Stairs No Sport for Howington

A representative of *Brick and Clay Record* called up James T. Howington, of the Coral Ridge Clay Products Co., Louisville, Ky., one day during the recent coal strike at ten minutes to four. Jim said: "Say old man, I'll talk to you in the morning, but I've got to get out of here, as these blamed elevators stop at four o'clock, and I've got a sore foot, and can't walk down nineteen floors."

Florida Brick Man Dies

R. S. Hall, Ocala, Fla., died recently at the Johns Hopkins Hospital in Baltimore. Besides being interested in a large number of industries, Mr. Hall was president of the Whitney Brick Co.

Philadelphia Brick Man Dies

Wm. H. Clothier, president of the Jarden Brick Co., Philadelphia, Pa., died recently at the age of sixty-six years.

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Atholl McBean, secretary of Gladding, McBean & Co., recently made a visit to the company's plant at Lincoln, Cal.

Former Brick Man to Run for Mayor

J. W. McClish, formerly a prominent brick contractor and brick man, has the honor of being selected for the mayoralty ticket at Brownsville, Tenn., one of the active towns of West Tennessee.

Attended Paving Brick Committee Meeting

J. R. Marker, chief engineer of the Ohio Paving Brick Manufacturers' Association attended a meeting of the advisory committee of the national association in Chicago recently.

Plants in Birmingham District Closed

Several of the largest brick and tile plants in the Birmingham, Ala., district are shut down on account of the present coal situation. No orders are now being taken for clay brick by local plants, according to a statement at the offices of the Brick Selling Co. It was stated that some orders for shale brick are being taken as there is a limited supply of these on hand. One manufacturer estimated that about sixty per cent. of the brick and tile plants in the district are shut down and all are being hampered by the coal situation. It was stated that only those plants which own their coal supply and operate their own wagon mines are not feeling the coal situation. Tile manufacturers, it is stated, have more orders than they can fill and most of them are taking orders only for future delivery and subject to the coal supply. Several manufacturers are not quoting prices for future delivery.

Plant Increases Capacity

The capacity of the plant of the Roper-Strauss-Ferst Tile Co. at North Birmingham, Ala., has been increased approximately twenty-five per cent. The concern manufactures building tile. Additional drying facilities have just been installed.

Brick Company Organized in Alabama

Papers of incorporation for the Decatur (Ala.) Brick Corporation were filed at the office of the secretary of state recently. The authorized paid in stock is \$3,000. The incorporators are H. T. Rollins, P. J. Baker, J. R. Morrison, all of Atlanta, and P. R. Morrison, of Decatur. It is reported that the new concern will engage in the manufacture of brick and tile.

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It is stated that the Decatur Brick Corporation has been chartered at Montgomery, Ala., by H. T. Rollins, the capital stock being \$30,000.

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Little Rock Plant Has Fire

One end of a kiln shed, 100 by 50 feet in size, and three or four carloads of brick were burned in the fire at the plant of the Arkansas Brick & Tile Co., Little Rock, Ark. It is supposed that the shed caught fire from the burning of brick

CONVENTIONS IN PROSPECT

January 20, 21 and 22—Canadian National Clay Products Association, Prince George Hotel, Toronto, Ont.

February 16, 17 and 18—Common Brick Manufacturers' Association of America, Deshler Hotel, Columbus, Ohio.

February 18, 19 and 20—National Brick Manufacturers' Association, Deshler Hotel, Columbus, Ohio.

February 23, 24, 25 and 26—American Ceramic Society, Hotel Walton, Philadelphia, Pa.

in the kiln. The destruction of the brick in the process of manufacture was the greatest loss, it was reported.

General Situation on Pacific Coast

The clay products situation in San Francisco is one which is improving very noticeably. The factories in this vicinity are gradually getting into shape for the increased demand for brick and other clay building materials and will soon be able to regulate production so that orders may be filled without delay. A marked improvement is reported in the condition of labor—alho the skilled workman is still badly wanted by the manufacturers.

Orders are increasing in volume all over the state—the revival of building operations has resulted in a strong demand for brick, hollow tile, terra cotta and other products and most of the output of the factories is sold before manufacture is completed. In fact, the general state of underproduction is experienced in the brick and clay industry as well as in most other lines of business.

To Revise Sewer Pipe Specifications

The question of revising specifications for the construction of sanitary sewers is to be taken up shortly by the city council of Los Angeles, Cal. According to indications at this writing, the city engineer will probably be instructed to submit a set of specifications which will allow both the clay and cement pipe manufacturers to use first class stock on hand for a period of six months, eliminating for the time being the more drastic requirements which are now on the boards. Members of the council agree that something should be done at once, as there are ten miles of open sewer ditches awaiting pipe right now, six additional miles for which contracts have already been awarded and 117 miles more proposed.

To Erect Pottery at Riverside

The citizens of Riverside, Cal., are very greatly interested in the recent rumor to the effect that the Alberhill Clay & Coal Co. may erect a pottery there which will employ between two and three hundred men and women. The company now has a plant at Alberhill where the clay mines are located. The manufacture of pottery is a new departure for this large concern; but it has provided any amount of raw material for various factories in the state. Supervisor Hamilton of Banning, Cal., stated that Albert Hill, head of the Alberhill organization was favorably impressed with Riverside as a factory site and advised the business men of that place to see that Mr. Hill was informed as to the natural gas resources of Riverside as an additional feature in its favor.

California Concern Speeding Up Deliveries

Due to the added interest in brick for construction work during the last few months, the Remillard Brick Co. has taken on an extra force of men at the Pleasanton, Cal., plant. An effort is being made to speed up deliveries as much as possible before the rainy season starts. The local office reports excellent orders and is looking forward to an even larger business during the coming year.

Large Government Order for Hollow Tile

The Alberhill Clay & Coal Co. is said to have received a government order for 10,000 tons of various sized hollow tile blocks. The contract is the result of extensive experiments which have been made at the naval base near San Diego, Cal.

The Thompson Brick & Tile Co., formerly known as the Eureka Brick & Tile Co., Eureka, Cal., reports business very good. The company has increased its drying capacity and is now preparing to manufacture hollow block.

Brick Company Organized in California

The Chamberlain Brick Co. was recently incorporated at Long Beach, Cal., with a capital stock of \$25,000. The director of the new corporation are J. J. Chamberlain, Philip L. Bixby and Laura M. Chamberlain, all of Long Beach.

Turns Out First Kiln of Brick

Good brick resulted from the first kiln which was just finished by the recently organized Grand Junction (Colo.) Pressed Brick & Tile Co. This kiln contains about one hundred thousand brick, all of which were sold before they had even been molded, so that the company will be but a few days in disposing of them. Another kiln will soon be in readiness for burning.

Organizing Safety Campaign in Delaware

A safety campaign movement is under way at Wilmington, Del., and prominent citizens, including manufacturers and building material men, are forming a committee to carry out a comprehensive program of educational work. The operations will take on different phases of accident prevention, and the local committee to be formed will become affiliated for practical work with the Delaware Safety Council, already organized. Among those forming the Wilmington committee are George H. Speakman and Charles Warner.

New Delaware Organization Made

The Delaware Clay Products Co., Wilmington, Del., has been incorporated with a capital of \$50,000 to manufacture and deal in clay products of various kinds. P. B. Drew, T. L. Croteau and H. E. Knox, all of Wilmington, are the local incorporators.

Clay Mines Ready for Resumption of Work

It is stated that the clay and coal mines of the Chicago Fire Brick Co., which is located east of Marseilles, Ill., is in readiness to resume operations whenever orders are given and the union miners desire to work again.

Stops After Fifty-Two Years Steady Service

After fifty-two years of continuous operation, it is reported that the J. M. Leach Brick Mfg. Co., of Kokomo, Ind., is to go out of business owing to a scarcity of labor.

Purchases Plant to Make Silo Products

With the purchase of the Maxwell (Ia.) Clay Products Co. plant by the J. F. Turner Silo Co., of Council Bluffs, Maxwell bids fair to become an important clay center in Iowa. A new company headed by Council Bluffs and Omaha business men has been formed under the name of the John F. Turner Clay Products Co. The present plant at Maxwell is to be considerably enlarged and most of the products will be used for silo construction. The company plans to put men on the road in four states and will have main offices in Council Bluffs and district offices at Des Moines and Sioux Falls, S. D.

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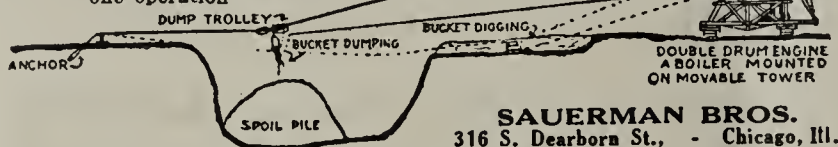
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Tell us your conditions and we will explain the economies or improvements that pyrometers will effect.

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State Tile Plant Closed

The Iowa State Tile Plant, otherwise known as the Inebriate Hospital Clay Works, closed down for the season recently. Superintendent Mackin has kept the plant going all summer and fall under disadvantages owing to the scarcity of help, but has been turning out some excellent tile and building block. When inebriate help became scarce on account of the report that the institution had been closed, the state sent fifteen men from Fort Madison to keep the plant in operation. Each convict has been doing more than a man's work in order to keep the plant going hence the decision to close.

Iowa Plants May Not Open 'Till Spring

The coal strike has practically closed every clay plant in the state of Iowa. The only plant now operating is the Vincent Clay Products Co. plant at Ft. Dodge which uses oil burners. Even the Vincent plant is not operating at capacity on account of trouble in getting power.

Even tho the strike is settled it is doubtful if many of the Iowa plants will open before spring and the state will again be faced with a shortage of clay products similar to the one which prevailed during the present year.

Iowa Men Organize New Clay Concern

William F. Martin and Sons of LeClaire, Ia., have filed articles of incorporation with the secretary of state and formed a company for the manufacture of clay products. The new concern is capitalized at \$250,000. The company will manufacture and sell drain and sewer pipe, brick and building blocks. It will also sell all kinds of building materials. Associated with Mr. Martin in the new plan are his sons, Charles W., Chester A. and Frank D. Martin. They have been in the brick and tile business for years.

Iowa Plants Give Employees Bonuses

It is said that three hundred employees of the Maso City (Iowa) Brick & Tile Co., and the American Brick & Tile Co., are to receive their annual Christmas presents in the shape of bonuses. It is reported that the total amount of money to be paid out by the Denison clay plant interests to the men will be about \$25,000. The reward is paid for continuous and efficient service during the past year. The amount received by each man will average from \$8 to \$100.

Fire in Hotel Used by Clay Concern

Fire late in November destroyed the hotel building at Van Meter, Ia., which was used by the Platt Co. to house its employees. The building was completely destroyed. It was leased by the Platt Co. which owned the furniture in the hotel, which was also lost.

Railroad Takes Only Coal Shipments

The fuel situation in Kentucky is a mess, and everyone is sore. On Monday, December 8, the C. & O., Railroad issued an arbitrary and general embargo, refusing all shipments except coal over its lines. This ruling gets the plant of the Louisville Fire Brick Works, at Carter County, Ky and several other brick plants in that district.

The Louisville Fire Brick Works was out of coal at its Louisville plant, and was refused supplies. The company was unable to supply brick needed in bricking up locomotive fireboxes, and when repairs to engines were curtailed, the company was given a ten day supply, provided that it was used for railroad work only.

Manufacturers Think Fuel Order Is Unfair

A number of brick plants in the Louisville districts have coal on hand, and could run full time until well after the first of the year, if given permission, as they had the foresight and cash to lay in supplies, and did so. The operators of such plants feel that it is absolutely unfair to close them up in view of the fact that they saw what was coming, and invested their cash in order to be prepared. The man who failed to prepare is out of luck anyway, as he isn't getting any coal.

Little Activity in Kentucky Factories

Everything is at a standstill in the building supply production game at the present time. The lumber mills are operating but eight hours. Brick plants with coal operate eight hours, while many are not operating at all. Some of the cement mills are down. Everything is at odds, and severe weather will probably play havoc in general.

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Salmen Brick and Lumber Co., New Orleans, La., is active at its plant and its sales department is figuring a number of large contracts in and out of the city.

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Demand for Building Materials in Baltimore

There is an active call for building materials of all kinds at Baltimore, Md., and vicinity, and particularly is this true in the matter of burned clay products. Common brick is in keen call, with prices ranging around \$20 and \$21 a thousand, delivered on the job. The brick situation in this city is not very encouraging at the present time, owing to fuel conditions, and unless relief is granted from the local fuel officials, it is likely that production at the local yards will be considerably curtailed. Other clay products, such as hollow tile, drain tile, sewer pipe, etc., are holding firm at present price levels, with slight trend towards higher quotations; should the present demand hold, it is probable that increased figures will obtain closely following the turn of the year. There is a healthy demand for face brick, with price range for high-grade selections from \$40 to \$50 a thousand. Local material dealers report an increasing call for fire brick, the present price of No. 1 standard being about \$70 per thousand, delivered on the job.

Serious Housing Situation in Baltimore

Housing work is the big question in the Baltimore, Md., district and a critical situation is likely to ensue unless the demand for homes can be satisfied. The Housing Commission appointed by Mayor Broening has not been as active in the opinion of many, as it should have been, and it is currently estimated that the municipality at the present time is about 10,000 houses short of current requirements. A number of local contractors have plans under way for the erection of large blocks of dwellings and relief is being looked for in this quarter. The conditions have grown so acute that even portable houses are being considered to tide over until permanent structures of brick and other fireproof materials can be constructed. It is said that about 2,000 houses have been built in this section during the past season and that about 1,000 homes are now in course of construction; Northeast Baltimore and Highlandtown have been the popular localities for this work.



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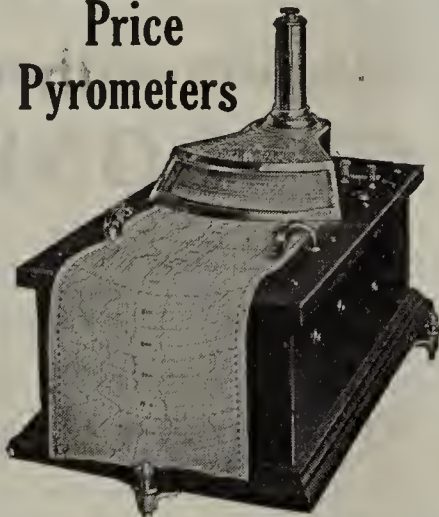
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There are other important advantages in using Price Pyrometers. We will be pleased to explain these advantages to you in detail. Ask us. Catalog on request.

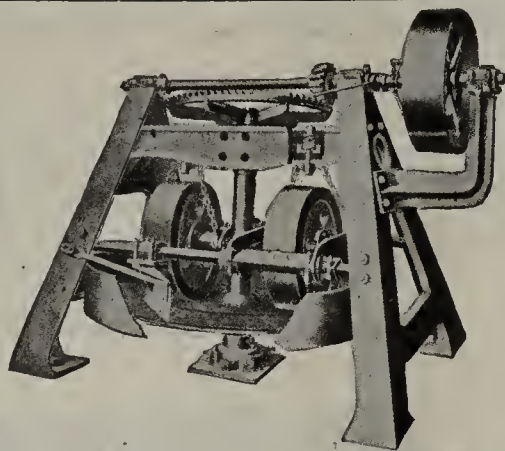
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HIGH GRADE MECHANICAL EQUIPMENT
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Baltimore Building Very Active

Top notch building operations continue to obtain at Baltimore, Md., and vicinity. It is said that the current volume of work under way is the largest in the history of the municipality, even including the active period just after the big fire in 1904. The present activities are estimated to embrace an amount of about \$6,000,000 in building valuations, and about one-half of which includes housing work.

Brick Shortage Acute in Massachusetts

Builders in Springfield and other cities in central and western Massachusetts are finding much difficulty in obtaining supplies of brick to meet their requirements and in some sections the situation is declared to be almost in the nature of a brick famine. Unless some relief is afforded builders affirm that it may be necessary to curtail building operations. Three reasons for the shortage are given: the unfavorable weather during the making season, the shortage of labor, and an enormous demand resulting from the building boom which has been gaining in strength since last July.

Charles M. Field, a Springfield brick merchant, discussing the situation, declared brick would command almost any price within a short time, from the present outlook. According to Mr. Field, Springfield dealers have virtually no brick except what has been contracted for and there is little to be had at the yards near Worcester or New Haven or Bridgeport, Conn.

E. K. Phillips, who conducts a large brick yard in Williamsett, a part of Springfield, says the labor situation is chiefly responsible for the shortage. It is almost impossible to get men and those that are obtainable demand two or three times as much pay as in other years.

The shortage is not confined to Springfield but is more or less general thruout the country, according to Russell A. Bailey, treasurer of the Springfield Brick Co. His company ordinarily has 8,000,000 brick on hand on December 1, but because of the labor shortage production fell off 60 per cent. and he said he doubted if there were 2,000,000 brick in his yard the first of this month. In order to help the local situation orders from out of town were being refused, Mr. Bailey said.

The Brownstone quarries at East Longmeadow, a suburb of Springfield, which have not been operated for three years or more, have been reopened in an effort to help relieve the situation. Manager Owen Marra declared the brownstone had come out faster during the late fall than he ever knew it to do before. Whether the brownstone will come back again and be used as a substitute for brick is questionable in the minds of many masons and dealers altho some declare it is cheaper, easier to handle and can be laid faster than brick.

Boston Brick Still Advancing in Price

The price of common brick in Boston, Mass., is advancing by leaps and bounds. During the past fortnight some dealers have been asking as much as \$24 or \$25 per thousand for up and down brick delivered on the job but in many cases this is merely a nominal quotation as the demand far exceeds the supply. The labor situation, fuel shortage and transportation difficulties all have their effect on the market with the result that the outlook in many cases is not very roseate. There is more office building construction going on in Boston than for some years and

several other big jobs are in prospect and some builders are resorting to the use of concrete blocks because of the small available brick supply. The only helpful feature of the season has been the fact that New England thus far has been experiencing an open winter with no snow in the immediate vicinity of Boston and not enough real cold weather to freeze up the ground.



The Winchester Brick Corporation has been incorporated in Boston to manufacture brick and tile. The new concern is capitalized at \$300,000.



New Plant Being Built in Michigan

The construction of a new clay plant has commenced at St. Louis, Mich., where the Carlson Brick & Tile Co. has been organized with a capital stock of \$30,000. It is reported that the company controls excellent clay deposits in that city.

Increase Stock of Tile Company

At a meeting of the stockholders of the Colburn Brick & Tile Co., of Zumbrota, Minn., it was decided to raise the capital stock of the corporation \$100,000. At the present time the capital is \$100,000 preferred and \$200,000 common stock.

A few years ago the Colburn Brick & Tile Co., of Minneapolis, purchased the property of the Minnesota Brick & Tile Co., near Zumbrota. This plant was formerly known as the Barr Clay Products Co. The Colburn Brick & Tile Co. has met with splendid success during the past few years owing to the tremendous demand for tile products of all kinds. The new issues of stock will be offered for sale to people in the towns or in the vicinity of the company's plant.

Good Demand in Mississippi

Jackson, Miss., and other large towns in that State give indication of good building for the first part of 1920. The Bullard Brick Co. at Jackson, Miss. reports a good inquiry on brick material and has several jobs under contract at the present time.

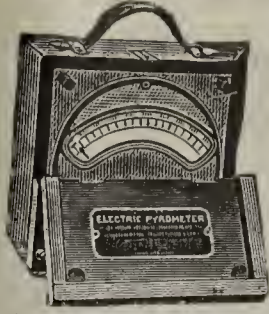
Just Completed Additions to Plant

Currie-Finch Brick Co. at Jackson, Miss. has completed additions to its plant and is supplying brick for considerable construction work in the central part of the state.

Large Refractories Company Shut Down

Work has been completely suspended by the Jonesburg, Mo. branch of the Walsh Fire Clay Products Co. The St. Louis plant was one of the first brick factories to shut down. Work had been steadily going forward on a new railroad spur at the Jonesburg plant but the project had been handicapped by the inability of the contractors to secure workmen. The new line will connect with the main line of the Wabash Railroad.

Robert Walsh, president of the company, recently closed a deal with W. E. Burke, manager of the Walsh Co.'s interests at Jonesburg, for 280 acres of ground, three miles southeast of the town. The consideration was \$10,000 and the ground is said to be rich in fire clay and other mineral deposits. Mr. Burke secured the land about a year ago in sections of 160, 40 and 80 acres. Mr. Walsh has been buying quite a bit of land in that territory, much of it for future



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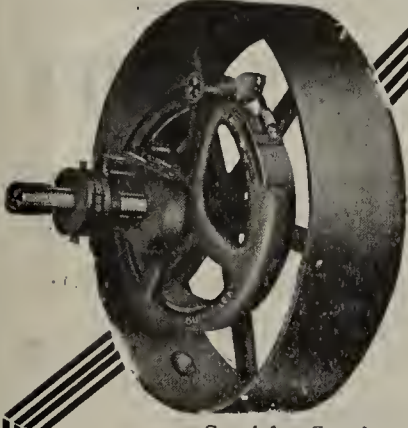
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We Can Save You Time, Money and Trouble on Fire Brick

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A Trial Shipment Will Convince You. Write Us

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Manufacturers of

**Fire Brick
Fire Clay
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Refractories**

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These building supply dealers can stabilize your supply and demand, not only in this crisis, but during all future unsettled conditions.

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**BUILDING
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use. It is said that fire clay in the vicinity of St. Louis will be worth a lot of money within a few years.

Little Industrial Space in St. Louis

H. R. Brashear of the St. Louis Chamber of Commerce Industrial Department says that St. Louis needs immediately 2,000,000 additional feet of manufacturing space if the city is to obtain factories that are seeking to locate there. He pointed out that there was no way of supplying the demand unless the Chamber or some other organization starts a building campaign.

Mr. Brashear says that he received inquiries for sites from a dozen manufacturers. He sent out 500 letters to real estate men of the city and to these letters received only about 35 replies. The result showed that little space was available, he pointed out.

Construction Jobs Not Vitally Affected

Most of the construction jobs under way in St. Louis have reached such an advanced stage as not to be vitally affected by the suspension of manufacturing operations. A few large projects have been curtailed and greatly reduced forces are being used on only certain work. Other construction jobs have been completely abandoned. Altho the majority of contractors do not expect a readjustment in time to make any further marked progress this season, some are hoping from day to day that conditions will be sufficiently improved to save them from serious financial loss.

No St. Louis Plants Operating

There are no brick or clay products being manufactured in the St. Louis district because of the inability of manufacturers to obtain fuel. The majority of plants in the district are closed down completely and have dismissed their employes, while a few have sufficient coal to keep their kilns warm and have retained small forces to keep their factories from deteriorating. The same condition applies to glass plants and to many other factories making building supplies, altho the brick and clay products manufacturers were the first to be compelled to close on a large scale.

Missouri Plant Will Use Oil Henceforth

The T. A. O'Leary Co., of Pittsburgh, Pa., has announced that the brick yard of the Farber (Mo.) Clay & Mining Co. has been converted from a coal burning to a fuel oil burning plant because of the coal strike. The Farber company found it impossible to obtain coal, so it closed down its kilns on November 3 and began to convert them. Fires were lighted again on December 1, and the plant will continue the use of oil, no matter what the outcome of the coal strike.

Plants Expect to Be Closed for Some Time

Even after the readjustment brick and clay products manufacturers in St. Louis do not expect to be able to resume operations immediately as it is their belief that the mines from which they draw their fuel supplies have deteriorated to such an extent that it may take several weeks to get them to the production when the strike was called.

Hollow Tile Becoming Popular in Montana

The Great Falls (Mont.) Brick & Tile Co. is another of the plants to be affected by the present fuel situation. The strike comes just at a time when the above company was en-

joying a splendid business. It has been making on the average of about one-half million brick a month. The building tile made by the above concern is becoming quite popular recently and a good demand is experienced.

New Brick Plant for Nebraska

As a result of the inspection of the clay property on the Fairchild's farm near Endicott, Neb., it is quite certain that a brick plant will be established there. An organization was completed as follows: H. E. Fairchild, president; L. A. Newal, vice-president; A. R. Nichols, secretary; E. R. Bee, treasurer; Chas. Hodges, T. J. Majors, S. L. Maylor and H. H. Pugh, directors. It is the intention to begin constructing immediately the necessary buildings and install equipment so as to begin the manufacture of brick as soon as possible. The corporation is authorized to issue \$125,000 worth of stock.

Organize Nebraska Clay Products Co.

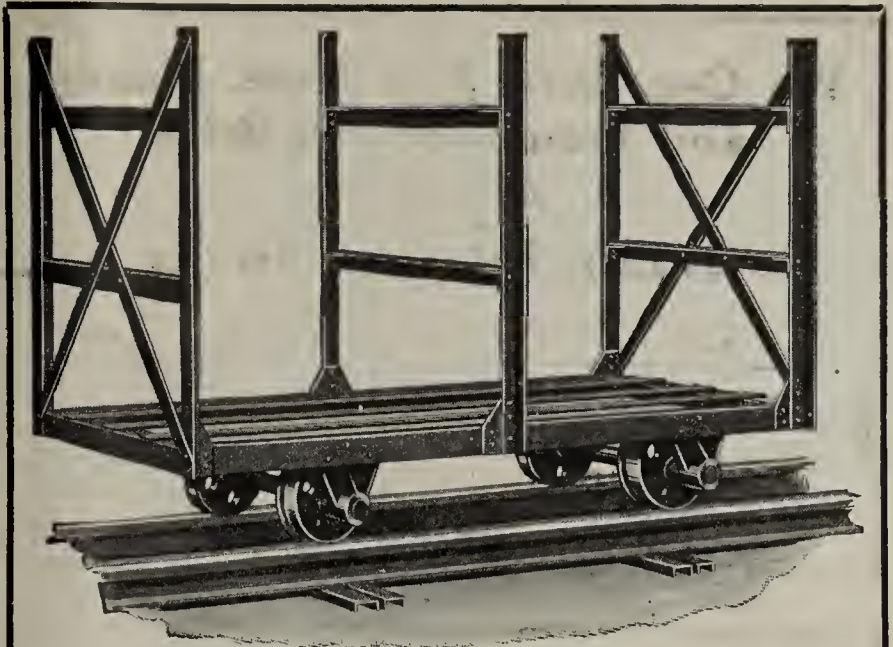
A large new concern capitalized at \$1,000,000 is reported to have been organized in Omaha, for the manufacture of clay products. The new concern will be named the Nebraska Clay Products Co., and the paid in stock is \$500,000.

Present Year Finishing Strong in Building

There is little change in the building situation in New Jersey or little ebbing in the tide of construction activities which are now taking such a foremost part in different municipalities. The mild, open winter in this section up to the present time has had the effect of stimulating building work, with the result that the usual decline, expected this time of year, has not, as yet come to pass. Housing work is going forward at a rapid pace, anything that will help to bring apartments and residences to a point of completion for immediate occupancy is being done; not a stone is left unturned to make the most of the favorable weather conditions now prevailing. There is a noticeable increase in industrial operations, particularly in northern New Jersey, and a number of important plants are now being projected, with ground to be broken at an early date. Public work is not backward, either, and the new schools and public buildings now being planned bid fair to make heavy demands for brick, hollow tile and other building materials in the different cities. At Newark, Jersey City, Paterson, Passaic, Morristown, Trenton and in South Jersey, the story is the same—things in building circles are moving, and moving at a pitch to keep those in the industry well on edge. The year is rounding out totals far beyond expectations of months ago and when final computations for 1919 are made, some surprising figures are going to be announced. The building trades in New Jersey have again come into their own, and it is only a few, very few, and incidentally the least prominent in the industry who are not optimistic for the future. The coming year looms big, and if the fall and winter activities of this year are to be taken as any indication, a banner 1920 is in store for manufacturers, wholesalers and dealers, as well as the other interests in the trade.

Record Week in Newark Building Permits

Newark, N. J., has demonstrated in a forceful and convincing way that it "knows how" when it comes to construction work. Not satisfied with small increasing totals in the volume and valuation of building permits from week to week, the first week in December has taken the "bull by the horns" and doubled the amount recorded for the entire month



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where—C = cost of power per year for the given drive, dollars;
d = diameter of driven pulley plus belt thickness, inches;
n = r.p.m. of driven pulley;
D = diameter of driving pulley plus belt thickness, inches;
N = r.p.m. of driving pulley.

If you don't like formulas, do it this way:

- (1) Add diameter of driven pulley to belt thickness, inches, and multiply by r.p.m. of driven pulley.
- (2) Add diameter of the driving pulley to belt thickness, inches, and multiply by r.p.m. of driving pulley.
- (3) Divide (1) by (2).
- (4) Subtract (3) from 0.98.
- (5) Multiply (4) by the cost in dollars per year of power for the drive.

The result is the dollars wasted per year because of unnecessary belt slip. These dollars can as well be saved by simply treating the belt with Cling-Surface.

Cling-Surface primarily stops slip. It also permits easy or slack running, thus permitting a belt to embrace the pulleys through maximum arcs. Hence Cling-Surface treated belts are doubly insured against slip.

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3

of September, and which, incidentally, at that time was thought very good. The first week in the present month is the banner week in the history of the local building department; a total of 72 permits was issued with aggregate valuation placed at \$4,821,070—and in a single week, bear in mind. During the month of September, which rounded out a total of \$2,436,545, operations were considered at high point, but now the city is really "stepping." It is interesting to note that this single week's total is only \$1,000,000 less than the total for the entire building work in the municipality during the whole year of 1918. And equally inspiring are the records of the department for 1919, for now only a few weeks away from the turn of the year, the results have exceeded all previous years. The highest record recorded for any twelve months was in 1913, with aggregate reaching \$16,317,973; the totals for 1919, including as far as the first week in December, are \$17,878,561. This shows in a way not to be demonstrated in any other manner, that building conditions are good—and very good in this locality. And that they are going to continue so is unquestioned.

Clay Product Prices in New Jersey

Common brick at Newark and other points in northern New Jersey is selling for \$22.00 and \$23.00 and upwards, delivered on the job; in the Jersey City district a price of \$25.00 is asked. In South Jersey similar figures prevail, and the call is particularly good in this locality. At Trenton and vicinity, the current quotations, delivered, hold at \$21.00 and \$22.00 and above. There is a good demand for hollow tile and clay tile partition blocks, and prices of these latter have advanced for different sizes during the past few weeks until the average reaches around \$120.00 for 3x12x12 in. size and \$130.00 to \$135.00 for 4x12x12 in. size. Face brick is moving in an encouraging manner, with price levels reaching at \$45.00 and \$50.00 per thousand for high grade selections. Good varieties are none too easy to obtain, and with fuel shortage looming up in the Pennsylvania plants, the principal source of supply, it is likely that stocks will reach a low ebb when it comes to a matter of really desirable material. Sewer pipe, flue lining and kindred specialties are holding their own in good style, and fire brick is coming more and more to the forefront in the different industrial sections. The price range of No. 1 Standard fire brick is from \$65.00 to \$70.00 a thousand at Newark, Trenton and other points.

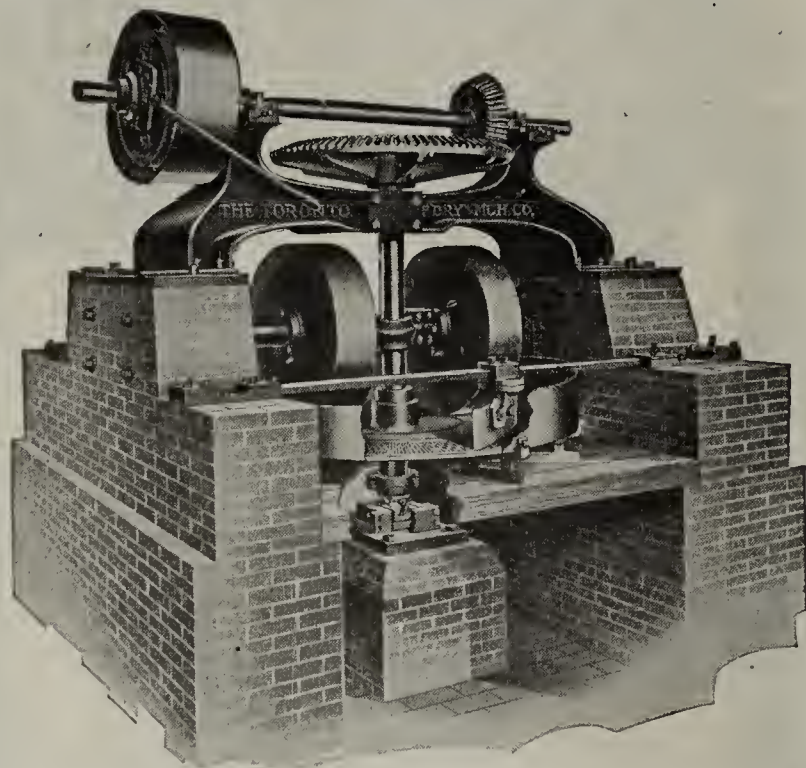
Accumulating Stocks for Winter Supply

At Jersey City, N. J., the Washburn Brothers Co., manufacturer of brick and dealer in mason materials, is receiving good shipments of its high grade brick produced at Glasco, N. Y. Stocks are being accumulated to provide a winter supply for this district, and a large wholesale as well as retail business is enjoyed in this line. Present prices at the yard are \$20.00 in wholesale lots. The Glasco plant is an all-season works, equipped for an aggregate production of 60,000,000 brick per year, but of course, this total has or will not be reached under conditions which have prevailed during the past months; moreover, the fuel situation is not very encouraging at the present time and may necessitate a reduction in output.

Seasonal Yards in New Jersey Close

Brick production has slackened in New Jersey to the point of the all-year round plants, the seasonal yards having shut down in the matter of new manufacture. This is true of the plants at Hackensack as well as at Trenton, and at the dif-

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Toronto, Ohio

ferent yards stocks which have accumulated are being moved at a rapid clip, so much so, that it is likely that the plants will have little or no material for sale as the winter months advance. Prices are holding very firm as might be expected, with indication of an advance at an early date. The Hackensack yards are asking from \$17.00 to \$19.00 per thousand for first grade material, while similar figures, reaching as high as \$20.00, prevail at the Trenton plants. The Independent Brick Co., Trenton, N. J., with plants at Bordentown, is continuing production at a good pace; this is a fine all-season plant, and is equipped for good efficient production. Large orders are being recorded.

Organize New Brick Company in Buffalo

The Poland Brick & Tile Co., Buffalo, N. Y., has been incorporated with a capital of \$25,000 to manufacture brick, tile and other ceramic products. The incorporators are F. Paluch and V. B. Wylegala, both of Buffalo.

Million Dollar Clay Corporation

The American Kreuger & Toll Corporation, New York, has been organized under state laws with a capital of \$1,000,000 to manufacture brick, tile and general ceramic wares of all kinds. L. N. Martin, P. J. Dobson and C. P. Schroetter, 64 Wall Street, are the incorporators.

To Hold Second Annual Home Exposition

The second annual "Own Your Own Home" exposition at New York, will be held at the Grand Central Palace, May 1-8, 1920. Arrangements for the event are now being made.

Report of Clays Found in North Dakota

According to reports, exhaustive experiments with clays have been conducted at the North Dakota School of Mines to determine their suitability for the manufacture of clay products. It is stated that large deposits of very good commercial clay have been found in the western part of the state, close to some of the biggest coal beds.

75% of Factories Making Pavers Closed

Brick plants, along with other manufacturing industries in the northern Ohio district, faced a shut down by December 15, when the coal supply of Cleveland and vicinity was expected to be exhausted. The fuel situation has become by far more serious than at any time during the period this country was at war. By December 8 there was only 5 per cent. of the normal supply of coal in the Cleveland district. At that time the Cleveland Federal Fuel Committee transmitted the order of Fuel Administrator Garfield to industries, which requires that hundreds of so-called non-essential manufactures must cease, and that the situation goes back to conditions prevalent during the acute shortage two years ago.

A branch of the brick industry hard hit is that of paving brick. At the end of the first week in December, according to figures prepared by Maurice B. Greenough, secretary of the National Paving Brick Manufacturers' Association, 75 per cent. of the factories had shut down. The data on hand shows that it requires between 650,000 and 700,000 tons of coal per month to keep paving brick factories of the United States running. This branch of the industry is one of the largest consumers of coal of any manufacturing.

With the priorities ruling at hand, opinions of clay prod-

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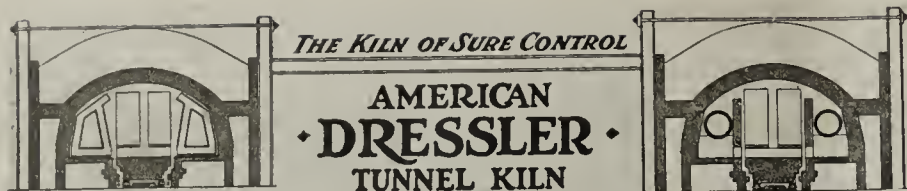
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BRICK MUST HOLD UP ITS REPUTATION

ucts producers are being sought. The decision on coal distribution is understood to consider five essentials first—transportation, public utilities, domestic consumption, government institutions, coastwise shipping. It is recognized that these five must have coal to permit the government to function. It is the opinion of leading paving brick interests that the industry wants no priorities. Paving brick men take the stand that all industries should have equal chance at coal after the first five essentials have been supplied. They take the broad view that all industries are important, candy manufacture as well as textile production. All industry supplies certain wants of the people, they point out, and that investors in all these interests must be considered. It is the belief of the paving brick interests that if all manufactures are permitted an equal share of the coal supply, a normal industrial situation will be arrived at more quickly, whereas enforcement of the system of priorities, by which a few at a time are favored, may result in a long drawn out chaotic condition. As in the war time coal shortage, the paving brick industry is somewhere near the bottom of the priorities list.

Find No Profiteering in Cleveland

Cleveland, Ohio, brick, tile and other building materials producers and distributors are freed from suspicion of profiteering in building materials. This is the consensus of opinion of the special grand jury of Cuyahoga County, Ohio, which recently held an extensive investigation into local price conditions. The report of the investigators has not yet been made, according to William Agnew, special assistant prosecutor, but is expected to include this view with other ideas on the subject. Reviewing the findings of the body, he says:

"The inquiry, which was searching and involved a large amount of statistical work from a large number of sources, showed no profiteering which could possibly come under the jurisdiction of the local courts. No indictments therefore were made. The only evidence of profiteering which came before the hearings was in the lumber branch of the building materials business. No local interests were involved, however. Nor could they be held responsible for the conditions under investigation. The inquiry tended to show that some western and southern mills have taken advantage of the demand by encouraging bids from lumber merchants, some even accepting bonuses, and turning over the lumber to such interests, tho the material may have been ordered by another. Such practice appears to have assisted in increasing prices greatly above normal, or what the cost of production warranted.

Sixty Ohio Counties O. K. Road Tax Levy

An address before the Ohio Automobile Trades Association, holding its convention at Hotel Statler, Cleveland, Ohio, by G. E. Rudisill, field secretary of the Ohio Good Roads Federation, brought home to probably the most influential body in the Buckeye State the value of the work of the federation in promoting better highways, and the chances for co-operation by the automobile interests. In his talk Mr. Rudisill compared road conditions in Ohio with those of other states, and told of various plans for improving highways in Ohio.

The National Paving Brick Manufacturers' Association, which with other material bodies, has been favoring the work of the federation, has gone on record as approving the work of the good roads workers in obtaining the O. K. of sixty Ohio counties for special tax levies for road improvements. Only six counties in the state turned the proposal

down. They were Hamilton, Williams, Van Wert, Adams, Holmes, Washington. The sixty levies which carried will raise close to \$7,000,000 a year for road improvement work. The funds will be used for maintaining county and unimproved roads, distinct from the improved roads the state highways department has taken over for maintenance.

The levies are made under one of the provisions of the Busbey-Fouts highway bill, passed by the legislature last spring.

November Building Permits High in Columbus

More building was done in Columbus, Ohio in November than in any previous November in the history of the city according to a recent report of the Columbus building department. The report shows that the department issued 254 permits for structures valued at \$529,455 during the month as compared with 102 permits and a valuation of \$317,555 in November of 1918. For the eleven months just past the department issued 3,296 permits having a valuation of \$6,043,960 as compared with 1,745 permits and a valuation of \$2,858,535 in the corresponding period in 1918. Included in the list of permits granted in November were several office structures and factories in addition to a large number of dwelling and apartments. Among them was a large addition to the Pennsylvania Railroad shops in Columbus, an office building on East Gay St., and a large factory on Innis avenue.

New Cleveland Plants Making Progress

Two new plants for Cleveland are going ahead with construction plans, altho the present outlook for production, owing to fuel shortage, is not so promising. At the Independent Brick and Tile Co. factory, much material, particularly drain tile, could be sold if it were available, according to Herb. F. Geist, president. Plenty of business could be booked by this firm right now. Progress of construction of the first units of the plant indicates actual brick and tile production by next spring. Fuel and material shortage has not halted building plans of the Superior Brick Co., and only the continuance of present unsettled conditions will prevent starting of production as planned originally, according to J. F. Aten, president.

Large Cleveland Concern Trying Out Oil

Of the fourteen producing plants of the Cleveland Builders' Supply and Brick Co., four had closed down during the first week of December with more likely to be closed if early relief from coal shortage failed. Production at the remaining plants was being maintained, however, according to E. W. Farr, director of production. Meanwhile the Cleveland Builders' Supply and Brick Co. is believed to be taking the initiative in the brick and clay products industry in experimenting with oil burning, with the object of using this fuel as a means of keeping production up to demand.

Face Brick Demands Good in Ohio

Emmet C. Howard, head of the Columbus Face & Fire Brick Co., reports a good demand for face brick of all kinds. The only difficulty at present is the inability to make shipments, due to the closing down of many plants on account of the coal strike. The demand is good and will continue so for some time to come. The plant at South Webster, Ohio, operated by the Webster Brick Co., of which the Columbus Face & Fire Brick Co. is sales agent, has been closed because of lack of fuel.

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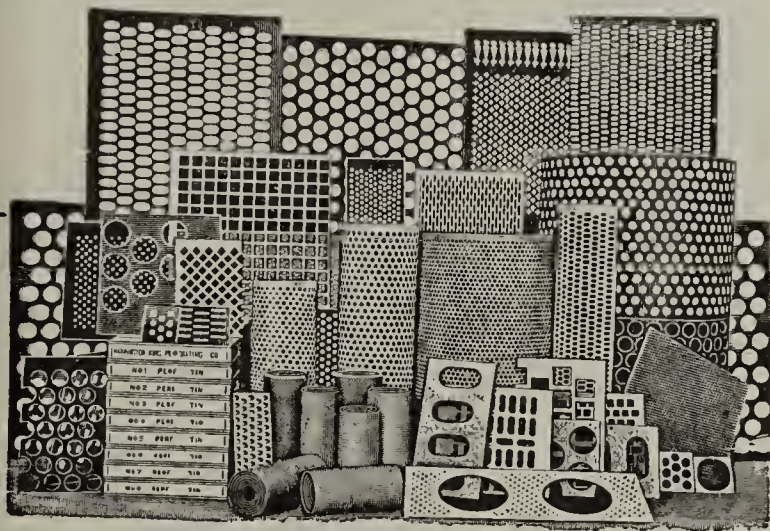
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You can safely guarantee that your brick
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You can get a higher price and influence
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Efflorescence is prevented absolutely.

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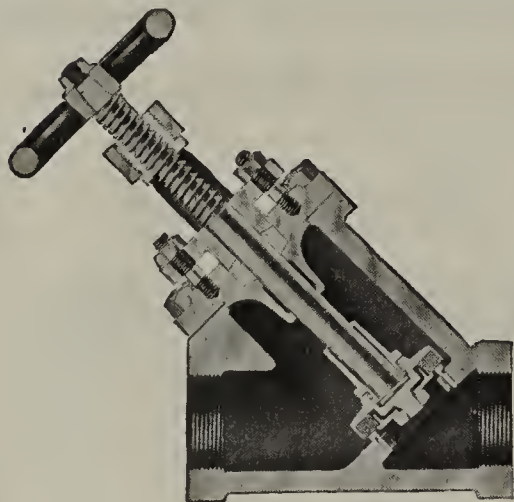
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Common Brick Going Strong in Central Ohio

Common brick in central Ohio territory are especially strong at this time. Altho prices are high there is a large demand for common brick and factories are unable to supply the market. Many of the common brick factories have been compelled to close because of lack of fuel which is cutting into the production to a large extent.

Hydraulic Press and Deckman-Duty Stop

Three plants of the Hydraulic-Press Brick Co. supplying the Cleveland district have shut down. Brick from these plants cannot be obtained for use in Cleveland, and there is no coal to burn brick in kilns.

Plants of the Deckman-Duty Brick Co. in Cleveland likewise have stopped producing.

New Drain Tile Plant for Ohio

The Sandcreek Brick Co., of Sandcreek, Ohio has been chartered with an authorized capital of \$170,000 to manufacture brick and drain tile. The incorporators are D. G. Moomaw, W. F. Demuth, F. R. Larimore, James L. Conley and Charles Bears.

Report Incorporation of New Shale Plant

The Ohio Shale Brick & Tile Co., of Cleveland has been incorporated with a capital of \$40,000 to manufacture brick and tile. The incorporators are C. A. Hagely, L. A. Dunham, H. B. Hershey, N. A. Miller and G. J. Horn.

Large Ohio Drain Tile Plant Closed

As a result of the coal strike, the Hancock Brick & Tile Co., of Findlay, Ohio, has had to shut down with the result that one hundred men were thrown out of employment.

Lock Haven Men Head New Brick Company

A clay plant which was to have been built at New Hope on the boundary line of eastern Pennsylvania across the river from Lambertville, N. J., but which was postponed on account of the war, is now being considered again. A number of men from Lock Haven, Pa., including C. H. Bressler, J. Chas. Schwamm and O. S. Kelsey, of Flemington, have filed a co-partnership and organized a company to be known as the New Hope Brick Co. The new firm which will manufacture red building brick is making application for a charter and expects to begin the erection of the plant early next spring. Altho the specialty will be building brick, it is proposed to manufacture other clay products also. The principal office of the concern will be located in Lock Haven, Pa.

Building Material Market in Philadelphia

The building material market is showing increasing momentum at Philadelphia, and there is a good healthy call for important building specialties of various kinds. Foremost in the list, of course, is common brick and the past fortnight has ushered in increasing inquiries for this material. Prices are holding very firm, with present figure ranging from \$20.00 to \$22.00 delivered on the job. There is a fairly good supply of brick in sight and not much cause for worry in this respect. Other burned clay commodities are well in the limelight of popular call, including hollow tile, drain tile, sewer pipe and so on. Clay tile partition is selling locally for \$110.00 per thousand, 3x12x1

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173

construction operations in this section have seen for the past ten years. The total work aggregated \$9,468,620, including 937 different jobs; this amount of work exceeds the month of October, when labor disputes were current, by about \$5,000,000, showing that the city is coming into its own again among the eastern districts. Factory and industrial operations are heading the list.

Clay Concerns Doing Special Work

The Philadelphia Terra Cotta Works, Philadelphia, Pa., is devoting the bulk of production at its plant at Spring Mill (Montgomery County), Pa., to special work. The company sets forth that with the present unsettled market conditions, prices and other primary factors of trade cannot be relied upon, making desired operations exceedingly difficult. The plant is now giving employment to from 50 to 60 men, and the labor situation is tending to curtail production to the point that no assurances of deliveries are being made at the present time. An optimistic tone is expressed regarding the general outlook, but with every desire for a return to more stable conditions for the general benefit of trade.

Warning of Higher Costs Stirs Building

In the face of a growing shortage of brick, the building movement in and around Pittsburgh, Pa., is increasing week by week. In the month of November alone building permits were issued in the city of Pittsburgh for \$1,800,000 for structures costing more than \$1,200 each. There was also a considerable number of buildings at smaller cost than that figure. Up to December 1 almost all the great volume of building was home building, but a stream of industrial construction is beginning to spring up, with the steel strike now virtually a dead issue, and other manufacturing activities hampered only by the coal strike. Contractors have warned the public that building costs will be 20 per cent. higher in the spring, and this is having a salutary effect upon sentiment for construction.

To Make Extensive Improvements on Plant

The plant of the Mountainville (Pa.) Brick Co. has been acquired by the J. C. Budding Co., of Lancaster, Pa., who intends to make extensive improvements. The plant is one of the largest of its kind in eastern Pennsylvania, and specializes in the manufacture of face brick. Its present capacity is twenty thousand brick per day and it is proposed by the new order to increase this to fifty thousand during the winter. Work on the enlargement of the plant will start immediately. The new owners who operate a building supply business and stone quarries in Lancaster and other points, intend to build a new plant in addition to the present one, and manufacture common brick in order to meet the great demand in Lancaster.

Hold Down Cost of Brick in Pittsburgh

The scarcity of brick in the Pittsburgh market is not boosting the prices materially. Practically all quotations have been withdrawn, and prices are subject to conditions at the time of shipment, but manufacturers are not taking advantage of this situation. There is an evident desire to keep the prices from ascending to any great heights, and one prediction is, that they will not change in any considerable degree before spring. What they will do then depends, of course, upon the state of the building market. Many manufacturers maintain that nothing less

than a rise in the price of coal will affect the price of brick.

Memphis Man Visits Chicago

Louis Moss, manager of sales department Jno. A. Denie's Sons Co., 82 S. Front St., Memphis, has just returned from a fortnight's trip to Chicago. Except for impeded deliveries he reports business good, demand in local territory good and prospects for construction in 1920 excellent. They handle fire brick, special terra cotta products, sewer pipe and many articles of tile in connection with building materials and are probably the oldest firm in Memphis.

Tennessee to Have Large New Plant

Reports state that a 50,000 daily capacity brick plant, to be known as the Johnson City (Tenn.) Shale Brick Corporation, will soon be built. The new concern was organized with a capital of \$200,000 by Geo. W. Hardin, president, and Jno. W. Reagon, superintendent and general manager.

Bad Weather Retards Building

The Fischer Lime & Cement Co., at Memphis, Tenn., and also at Little Rock, Ark., report an active demand for roofing materials and sewer pipe; terra cotta trade good; fancy brick and fire brick strong and active, tho the bad weather for sixty days has greatly retarded the starting of new work.

Historic Brick Laid in College Building

A historic brick from the old college was laid at Knoxville, Tenn., a few days ago as the first brick of the new Ayres Hall, at the University of Tennessee. It was quite a hundred years old. A trowel of cedar was used, also made from parts of the old building and the lady who laid the brick presented a union card.

Increase in Memphis November Permits

The increase in building permits at Memphis for November, 1919, exceeded those of November, 1918 by \$157,880. The valuation for November, 1919 was \$495,000. The first eleven months of 1919 at Memphis show building valuations by permits of \$6,512,200.

* * *

The Memphis (Tenn.) Brick Supply Co., Goodwyn Institute, is supplying the brick material on several structures being finished and will fill contracts on a number of large structures to start early in 1920.

* * *

Will Construct New Plant in Texas

As a result of an investigation of clay properties in Eastland, Texas, by the Eastland Chamber of Commerce, a company has been organized to construct a brick manufacturing plant on the site investigated, the machinery for which is already in transit. It is said that an abundance of good clays are obtainable in the vicinity of Eastland, Texas, and that cheap fuel is also available.

Plant of Large Capacity in Virginia

The Federal Clay Products Corporation, incorporated with authorized capital of \$100,000 is establishing an immense brick plant in Augusta County, Va., on the outskirts of the city of Staunton. The plant is to have a daily capacity of one hundred thousand brick.

INSURANCE AGAINST FIRE At Actual Cost

The Manufacturers of Clay Products at Reciprocal Insurance Bureau, offers you an opportunity to come in and insure against fire with preferred risks that are of your own class and engaged in the same line of business. This Bureau saves you the expense of paying for (1) enormous overhead, (2) agents' commissions, (3) companies' profits. You are assured of greater safety, co-operative assistance of a practical kind, and better service.

A large Brick and Tile plant owner writes:

"We can truthfully say we have never had more prompt and satisfactory adjustment of claim than in this case."

Write us for rates and our plan to render better service and greater safety.

Manufacturers of Clay Products at
Reciprocal Insurance Bureau
29 S. LA SALLE ST., CHICAGO



Light steel rails

We saved the day for the Clay and Coal Operators in War Times by furnishing BUCKEYE MINE RAILS, whenever and wherever needed, and while many other Steel Mills were running exclusively on other material, you could not have operated without us at that time.

Now, in Times of Peace, we ask that you do not forget us, as we can, and will render the same unexcelled service, and furnish the same high quality of material. "Buckeye means best", and BUCKEYE LIGHT STEEL RAILS are better still. All sections from 12 lb. to 40 lb. inclusive always in stock for quick shipment.

Let us have your inquiries, and we will take the chance of developing them into orders on our books.

THE BUCKEYE ROLLING MILL COMPANY
STEUBENVILLE, OHIO

CALDWELL

ELEVATING, CONVEYING, POWER TRANSMITTING MACHINERY

Bucket Elevators, Buckets, Boots, Steel Elevator Casings, Belt Conveyors, Screw Conveyors, Cable Conveyors, Gears, Pulleys, Sprockets, Chain Bearings, Shafting, Screens.

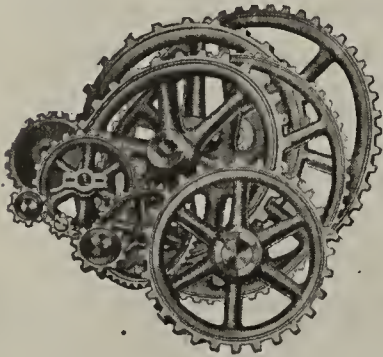
H. W. CALDWELL & SON CO.

CHICAGO

New York
50 Church St.

17th St. & Western Ave.

Dallas, Tex.
709 Main St.

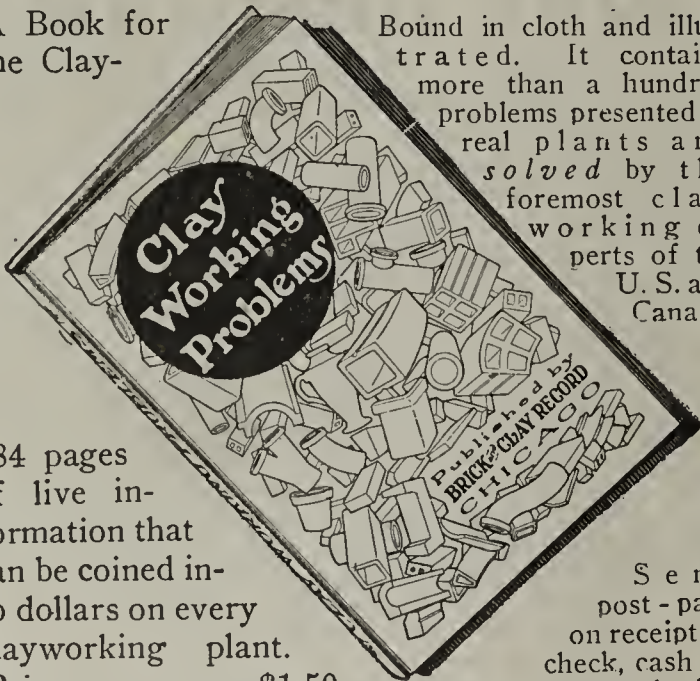


101 Questions Answered

A Book for the Clay-

Bound in cloth and illustrated. It contains more than a hundred problems presented in real plants and solved by the foremost clay-working experts of the U. S. and Canada.

184 pages of live information that can be coined into dollars on every clayworking plant.
Price . . . \$1.50



Sent post-paid on receipt of check, cash or money-order by

Brick and Clay Record

610 Federal St.

CHICAGO

Virginia Concern Increases Capital

It is said that the Norfolk (Va.) Pressed Brick Co. has increased its capital from \$10,000 to \$25,000.

Stock for Brick Plant Nearly Subscribed

It is reported that over one-half of the stock for the new Shope Brick Co., which is to be established at Puyallup, Wash., has been subscribed and it is expected that the full amount will be subscribed in another week. The site for the plant has been chosen and officers elected.

Pottery Plant Has Fire Loss

A loss of \$25,000, which was mainly in stock that had been stored, was experienced by the Kenilworth Tile Co., of Newell, W. Va. The fire, it is believed, originated from a blaze from a kiln. The roof of the kiln shed was also destroyed.

✱ ✱ ✱

A brick company has been capitalized at \$170,000 at Stone Creek, W. Va. The name of the new concern is Stone Creek Brick Co.

✱ ✱ ✱

Coal Mining in Alaska

According to the U. S. Geological Survey, the production of coal in Alaska in 1918 was 75,606 tons, valued at \$411,850. This may be compared with 53,955 tons, valued at \$265,317, in 1917. The production for 1918 was by far the largest in history of coal mining in Alaska, being 40 per cent. larger than the output for 1917, which was also greater than that of any previous year. It is believed that a substantial coal-mining industry has at last started in Alaska.

Novel Profit Sharing Plan in This Factory

Charles Wright, who, before he became president of the Porcelain Enamel Products Co. was foreman in a stove factory, has adopted a novel profit sharing plan in his factory which is heralded as the best ever tried in St. Louis. Industrial unrest, radicalism, or friction between capital and labor has no place in the plant. Moreover, there are no foremen.

A blackboard in the factory is used as "books," and cost of production, profits etc. are chalked daily. Mr. Wright divides the profits with his working partners. About a third of the employees are women. The regular wages are higher than the union scale and the shop is run on the open shop principle. The employees, who selected other employees, see to it that there are no drones in the factory, for they would lose money if there were idlers among the profit-sharers.

The plan was inaugurated October 1 and at the end of the first month the average profit-share handed to each employe above his wages was more than eight dollars. The employees are speeding up production now that they have seen how it benefits them and it is expected that the second month's bonus will be almost twice as much as the first.

Employees receive 15 per cent. of the first \$1,000 or less over the cost of operating the business and 10 per cent. of every additional \$1,000 profit. Laborers get 20 per cent. of the employees' profits, the women 35 per cent., and the skilled men 45 per cent.

If an employe is late in reporting for work a fine of one day's share of the profits is assessed and if absent for a

day a share of one week's profits. Money derived from the fines is placed in a fund which is equally distributed among the employes at Christmas time. This part of the plan was suggested by employes themselves.

Mr. Wright says that for many years he has been interested in welfare work and believes "in leading men instead of driving them."

* * *

According to figures made public by the Bureau of Internal Revenue, manufacturing corporations contributed 62 per cent. of total income and excess tax on corporations for the year 1917. The number of taxable returns from such corporations was 58,788, reporting a total gross income of \$40,437,716,898. Deductions were \$34,701,711,263, leaving a total net income of \$5,736,005,635, on which the tax was \$1,326,960,480.

* * *

COAL STRIKE ENDS

(Continued from Page 1135)

are showing considerable reluctance in returning to the pits, feeling that they had been betrayed and exploited, if not actually robbed. Let it be remembered that Secretary of Labor Wilson suggested a compromise of thirty-one per cent. increase in wages; the operators themselves offered twenty per cent.; but Fuel Administrator Garfield said that fourteen per cent. was sufficient, and what he said went. This hitting of the toboggan is bound to have a bad effect upon all concerned.

Many of the operators are not satisfied with the settlement. Some of them, we understand, are now debating whether or not they will be able to open and operate their mines if they must pay the fourteen per cent. increase out of their profits.

Fuel Administrator Garfield, we know, is not satisfied. He has asked President Wilson to accept his resignation because of his divergent opinion of the coal strike settlement.

POLITICS CAUSED STRIKE

If our information is at all correct, we know now that the whole cause of the controversy between the bituminous miners and operators was the political aspirations of two candidates for the office of president of the United Mine Workers of America. Development after development and agitation upon agitation on the part of the radical element among the miners

Repeat Orders for
"Hurricane" Automatic
Stove Rooms and Mangles

have followed quickly, after practical tests and demonstrations in many of the largest and best equipped plants, because they

Speed up drying 50 to 75%;
Improve the quality of ware;
Save labor and are easily handled;
Fire-proof, Steel construction.



FEED END OF "HURRICANE" AUTOMATIC STOVE ROOM.

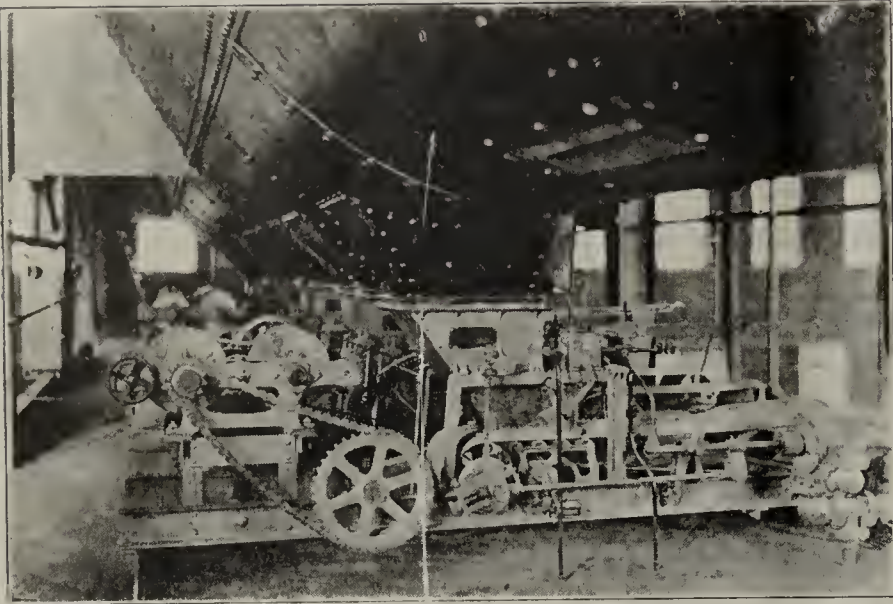
Our experience and engineering service may be of benefit to you, in selecting the "Hurricane" Stove Room, Mangle, Drying or Conditioning Machine best suited to your requirements.

Automatic or Truck Systems

The Philadelphia Drying Machinery Co.

Stokley St. above Westmoreland

Philadelphia, Pa.



Here They are— 9 of 'em

Working in batteries of three each, these 9 Schaffer Poidometers are measuring, weighing, and delivering material at less cost and with better results than the job was ever done before. Every third machine in each battery is equipped with liquid measuring attachment.

The Schaffer Poidometer

does all the work of your pug mill man. This saving in labor is sheer velvet. Machine improves the temper of column. No more cracked ware from the dryer. Weighs from 11½ to 21,000 lbs. per minute according to size and adjustment. Weight controls gate; gate controls feed. 99.75% accurate. Have you investigated the merits of this machine—savings in labor and increase in perfect ware that is possible at your plant? *Write us for information and data.*

The Schaffer Engineering & Equipment Co.

Peoples Bank Building,

Pittsburgh, Pa.

as opposed to the conservative element, finally led to the break with the operators. In the meantime, industrial America and the public looked on, and got just what the innocent bystander always gets.

Added to the labor union politics was the worst kind of political maneuvering at Washington. With President Wilson still a very sick man and unable to attend to national business, members of the cabinet and others who are not members held heyday over the coal issue. It seemed as tho every one was trying to be the "man of the hour." Even McAdoo appeared on the scene unofficially with his official information.

This much might be said for Dr. Garfield: he was probably the only one who acted in the controversy without any thought of the presidency.

The late lamented coal controversy will go down in the history of America as one of the most outrageous assaults upon the rights of the people and of industry; the worst political blundering, and the most shameless exhibition of personal ambition and greed we have ever seen.

IT MIGHT HAVE BEEN WORSE

The coal strike hit the clay products manufacturing industry at a time when there was less suffering and inconvenience than might have resulted if it had happened in spring or summer. Just as soon as the shortage of fuel became serious, most of the clay plants in the country closed down, only those operating who could be supplied from wagon lines. This shut-down was taken advantage of by manufacturers who had annual repairs to make. Those, of course, who burned fuel oil were not affected.

Perhaps the recent coal crisis will lead some clay products manufacturers to install oil burning equipment.

However, we venture to say that our industry has not suffered greatly by the recent strike and if coal production immediately increases and is kept at a high level all during 1920, little actual loss will be realized.

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

New General Sales Manager

Louis J. Schneider was appointed general sales manager of the Clark Trutractor Company, 1122 South Michigan Avenue, Chicago, Illinois, on November 1, 1919.

Mr. Schneider is a graduate of the Stevens Institute of Technology of Hoboken, New Jersey, and is a member of the Society of Automotive Engineers, as well as the American Society of Mechanical Engineers.

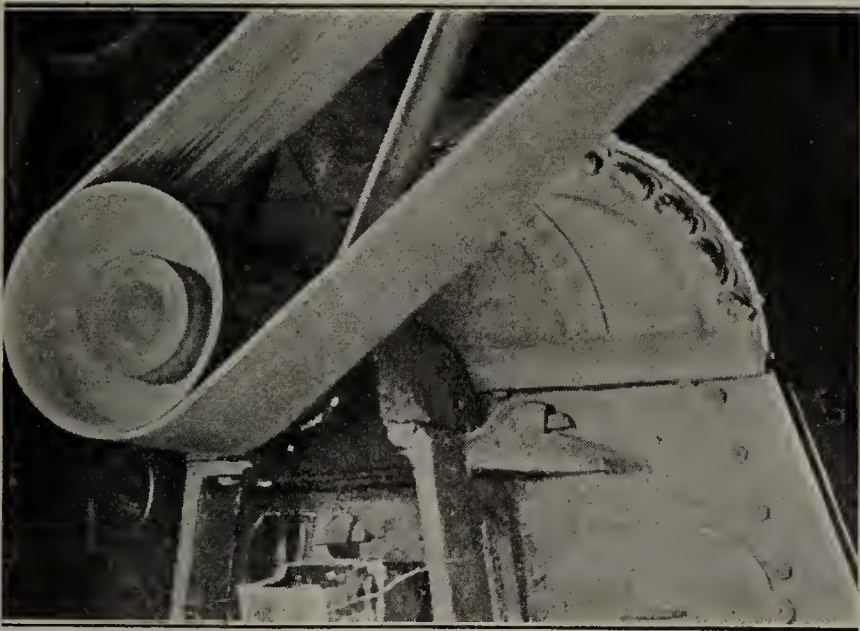
He had been closely identified for many years with the automotive industry, having served in the engineering department of the Hyatt Roller Bearing Company during 1911 and in the sales department from 1912 to 1916; during the early part of 1917 Mr. Schneider was sales manager of the Jackson Rim Company, Jackson, Michigan, and later in the same year he became sales manager of the Harrison Radiator Company, Lockport, N. Y., which connection was severed at the time he assumed charge of the sales department of the Clark Trutractor Company.

Probably every man identified with the automotive industry knows "Louie" Schneider. His ability, and past experience in the automotive field will enable him to conduct successfully the sales campaign on this new industrial vehicle which is the first specially designed gasoline propelled industrial truck placed on the market.



In Brick and Clay Plants

In the November issue of "The Booster," the interesting house organ published by United States Rubber Company, telling about Sawyer Belting, appears a short article under the title, "In Brick and Clay Plants." For the benefit of our readers who may not receive the booklet, we reproduce it herewith together with illustration:



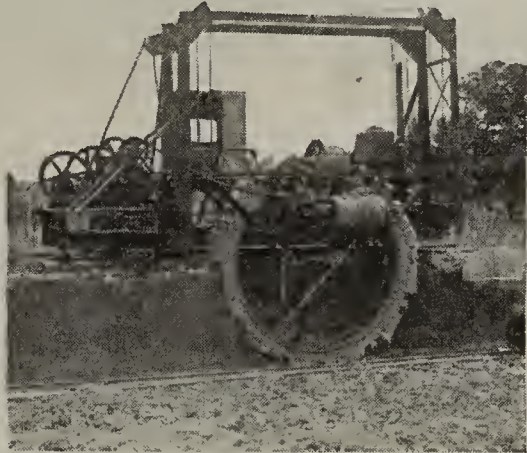
A Brick Plant Drive.

"In making a careful study of the belting needs of brick and clay plants our engineers found out years ago that no belt but the very best would stand the severe conditions imposed. They came to the conclusion that a belt that would resist grit and abrasive material, that would not slip, and that would permit of a constant and uniform power

Buckeye

Traction Digger

As we couldn't better the perfect mixing, we improved the Buckeye construction to handle increased capacity and to lower your digging costs.



You want these Advantages

The Buckeye Digger costs less in first cost than any other types of traction diggers.

Operating and maintenance costs are surprisingly low. It operates in pits that are too soft for heavier type machines.

It gives a better mix than any other practical clay digging machine.

That these advantages are of practical benefit to clay manufacturers is proved by the fact that more and more Buckeye Traction Diggers are being used in clay and shale pits than ever before.

Here are a few users:

Crossman Company
New York, N. Y.

Haeger Brick & Tile Co.
Aurora, Ill.

Edgerton Clay Products Co.
Edgerton, Ind.

May we send you data? Ask for a copy of "Digging Clay for Profit."

The Buckeye Traction Ditcher Co.

Findlay, Ohio



The Mathews Stands the Gaff

HERE is conveying equipment built to deliver many long years of sturdy service.

Users everywhere tell us that their Mathews Gravity Conveyers, installed six to fifteen years ago, are as serviceable today as when new.

One writes that "At no time in over ten years have we had to suspend operations due to a breakdown in the system". Another states "We have not had to replace a single bearing or defective part". And another: "The Mathews Gravity Conveyor eliminates breakage due to rough handling by the old-fashioned method of trucking and loading".

Become one of the satisfied hundreds of Mathews users. For the Mathews Gravity Conveyor is the modern, better way to move brick from kiln to car or barge, and around the yard.

Learn how the Mathews Gravity Conveyor will cut costs, save time, and reduce your force of laborers.

Write us today.

MATHEWS
SPEED ECONOMY
GRAVITY ROLLER CONVEYER

MATHEWS GRAVITY CARRIER CO.

108 Tenth Street, Ellwood City, Pa.

Branch Offices: Port Hope, Ontario London, England

applied to every unit of machinery, was the one that would someday dominate the field.

"With this information to work on, they devised what is today the brickman's standard—Sawyer Stitched Canvas Belting. Every day Sawyer is working its way more and more into brick and clay plants and is being used in every way belting can be used—power transmission, elevating and conveying. It seems probable that eventually stitched canvas belting will be used exclusively in every brick and clay plant throughout the country."

If you want your name on the mailing list to receive "The Booster," just write United States Rubber Company, New York City.

✻ ✻ ✻

John H. Allison Joins Celite

John H. Allison has joined the Sales Engineering Department of the Celite Products Company, producers of Sil-O-Cel Insulating products, in the Pittsburgh District.

Mr. Allison is a graduate of the Mechanical Engineering Department of the University of Pittsburgh, and has had broad experience in the industrial field, having been associated with the Crucible Steel Company of America, Pittsburgh Valve Foundry & Construction Company, Pierce-Arrow Company, Model Engine Company of Pittsburgh, American Brake-Shoe Company at Erie and the Pittsburgh Bridge & Iron Company.

Mr. Allison is fully qualified through previous training and technical experience to represent the Celite Products Company in this important district.

✻ ✻ ✻

Chicago Office for Gandy

An important development of the belting industry in the Middle West is the announced establishment of a Chicago branch by the Gandy Belting Company, of Baltimore, Md.

The new branch, which will be put into operation in the near future, is expected to carry one of the largest and most complete stocks of belting in the country. It will be situated at 549 Washington Street, corner of Clinton, in the heart of the machinery district.

In opening a branch at Chicago, the Gandy Belting Company expects, in addition to a prompt filling of its orders from that city, to increase the efficiency of the service for which Gandy has always been noted.

Fielder I. Schillinger, Jr., who has been in charge at the New York office of the Gandy Belting Company, has been transferred to Chicago where he will act as manager of the new branch.

Speaking of the need for a new service station one of the Gandy officials said:

"Under the spur of reconstruction, mechanical activity has increased enormously and its pressing needs can be adequately met only by prompt, efficient service—complete stocks near at hand for the quick filling of orders. Gandy service has kept pace with industrial growth for more than forty years and the establishment of our new branch in Chicago is a logical step in the development of a big enterprise to meet the increasing demands for Gandy belts in the industrial and farm machinery fields."

✻ ✻ ✻

An attractive folder has been issued by Ball Engine Company, Erie, Pa., illustrating and describing various types of their shovels, and users of power shovels—or those contemplating the purchase of such shovels—would find it worth their while to send for a copy. It is known as Bulletin S-36.

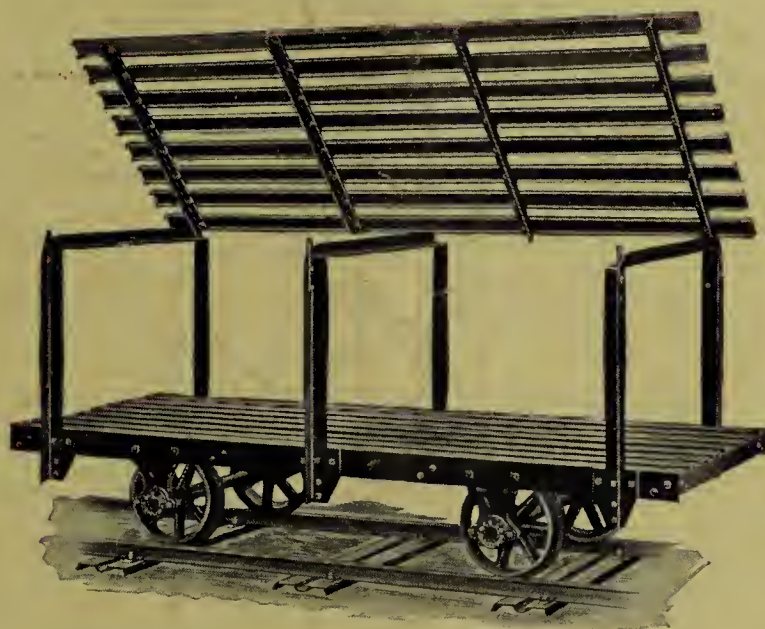
✻ ✻ ✻

"International Cars" are effectively illustrated in a new 4-page circular which they have just mailed to the trade. If you want a copy write to International Clay Machinery Co., Dayton, Ohio. They will also be glad to send copy of Catalog No. 10.

✻ ✻ ✻

Two new catalogs have been issued by Link-Belt Company, Chicago, and will be sent to those of our readers who will write for copies. Book No. 380 is devoted to Electric Hoists and Overhead Cranes, while Book No. 375 tells about their labor-saving Elevators and Conveyors. Both books are profusely illustrated, so that the reader can readily understand the many and varied uses to which equipment of this sort is put.

BRICK *and* CLAY RECORD



Lakewood Double Deck Car No. 167

DRYER CARS
AND
CLAY WORKING EQUIPMENT



FRANK H. ROBINSON
PITTSBURGH, PA.

Catalog now on the press, ready for distribution in January, will be mailed you on request. Ask for your copy.

THE many destructive influences at work on dryer cars make it worth your while to investigate the design and material that goes into **your** equipment.

Robinson—"LAKEWOOD LINE"—Dryer Cars are designed by specialists in this work. Only the very best of material specially selected for individual requirements is used.

Robinson Cars contain surplus, but not excess, strength. They are built for capacity, freedom from repairs, and long life.

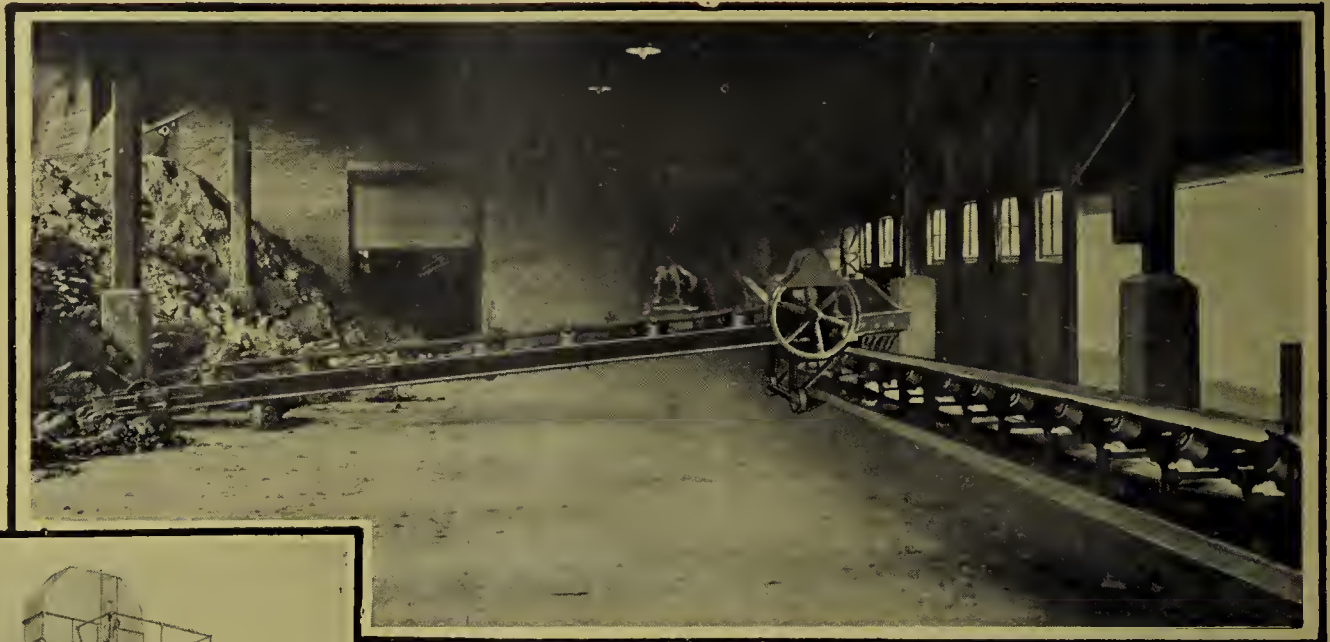
Write for latest catalog

Frank H. Robinson

General Office
Pittsburgh, Pa.

Factory
New Galilee, Pa.

Weller Conveying Equipment



Do You Realize

That every ounce of the Nation's manpower is needed in production—that every man you employ in work that a machine will do quicker, better or at a lower cost, not only reduces your own efficiency and profits, but intensifies the abnormal conditions of industry which now obtain?

Weller

Conveyors and Elevators

are relieving the labor shortage, increasing the output, and reducing the cost of production by replacing man power wherever materials are handled in cement, brick, stone, gravel and other material plants throughout the country.

Correct engineering principles, the best of materials and sturdiest construction plus thirty years' experience are embodied in every Weller equipment.

Experienced engineers at either our home office, or branch nearest you, will gladly assist in solving your conveying problems.

Weller Manufacturing Co.

CHICAGO

NEW YORK
BOSTON

PHILADELPHIA
PITTSBURGH

BALTIMORE
SALT LAKE CITY

WATT CARS

Watt Cars vary in size, depending on conditions, but measured by long time service, they are all built for big jobs.

Watt engineers study your hauling requirements at first hand. Every important factor is carefully taken into consideration. The finished cars then become as much an individual part of your plant as the layout of the grinding room. They work like clock-work.

Watt Cars are best for your pit or dryer use because they are built for **your** requirements. They stay on the job, and cost least to operate and maintain.

The Watt Mining Car Wheel Co.

Barnesville, Ohio

Denver Office:
Eindrooth, Shubert & Co.
Baston, Bldg.

San Francisco:
N. D. Phelps, Sheldon
Bldg.

Philadelphia:
Edelen & Co., 235 Commercial Trust Bldg.



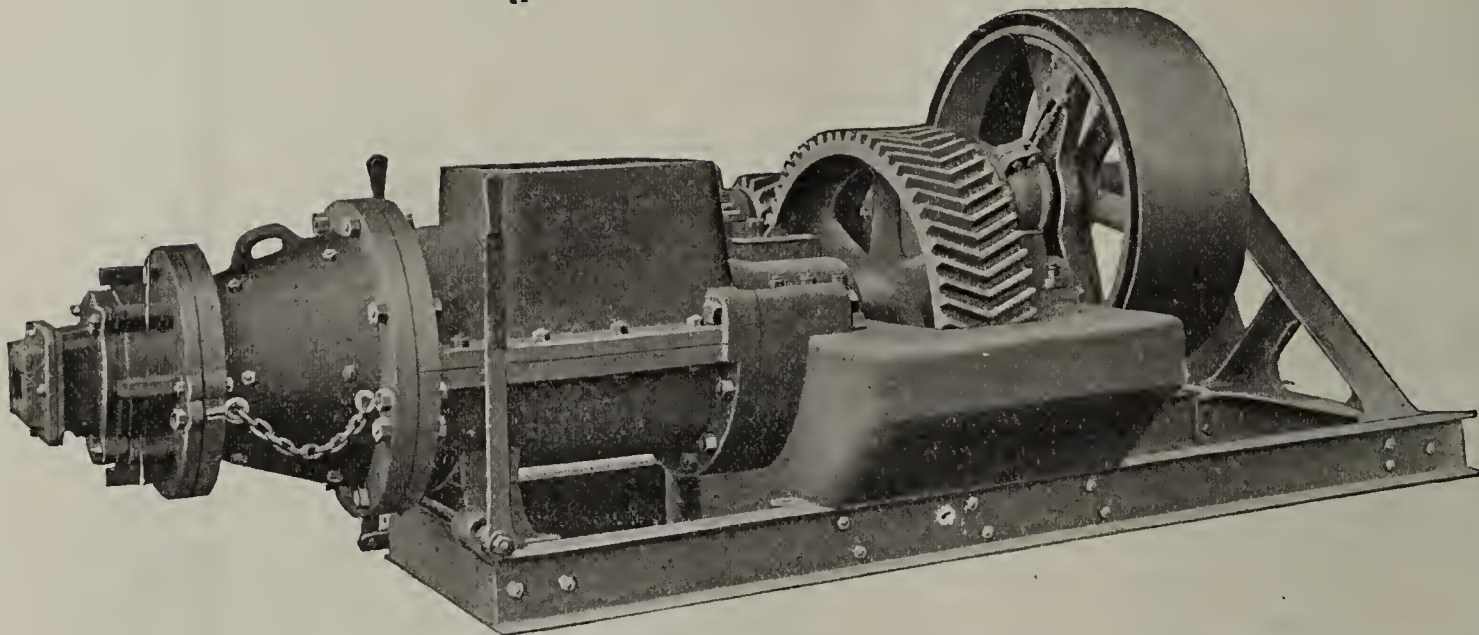
CUSTOMERS SAY—

"It is a first-class piece of machinery"

"Operating more than 2 years and shows no indication of wear."

BONNOT

No. 18 Auger Brick Machine



Why does this machine "operate for two years and show no indication of wear?"

The answer is found in its construction.

The frame—one piece casting with reservoir for oil in base.

Marine type thrust bearing—giving large thrust area.

"Rolling mill" gears made of cast steel and machine molded. Run as smooth as cut gears.

Every Bonnot Machine dominates its field just like the No. 18.

Write for catalogue

The Bonnot Company
CANTON, OHIO
"LET US STANDARDIZE YOUR PLANT"



A Tough Belting Problem and the Belt That Solved It

IN this Delaware brick yard they used to consider the disintegrator drive an almost hopeless belt position—twenty-three feet from center to center, with an idler six feet below and seven feet back of the driven pulley.

Various woven or stitched canvas belts went to pieces on this drive in from two months to a year.

In September, 1916, this 14" x 7 ply Leviathan was put on the job, and for three years has pulled the load every day without slipping once. On one occasion only has the belt been taken up.

It is this sort of service that has made Leviathan-Anaconda a fixed specification in brick yards all over the country.



MAIN BELTING COMPANY - Philadelphia
New York Boston Chicago Pittsburgh Atlanta San Francisco





50-Pound Blocks on a B-G Conveyor!

EVERY man—shoveler, wheelbarrow-handler or what—you keep on your pay-roll that can be replaced by a material-handling machine, will continue to be a sapper of your profits.

You can easily solve this difficulty as well as the labor-scarcity problem, and at the same time show a bigger profit on your books, by using the

B-G Standardized Conveyor

The photograph below shows a B-G Conveyor (Style B, 30 ft. x 18 in.), loading and unloading Granite Paving Block at the Shops of the Cleveland Railway Company. The blocks weigh in most instances as much as 50 pounds. The firm considered this B-G such a big help that within 3 months after its installation they ordered two additional machines.

This efficient labor-saving machine does the work quicker, with less damage in handling and at a reduction of 50% to 90% in costs.

Singly or in combination they will eliminate 3 to 20 men from your pay-roll. With B-G Conveyors on the job you will never face the possibility of their "going on strike."

B-G Conveyors handle coal, coke, cement, gravel, cinders, brick, crushed stone, ashes—in fact, all sorts of package and bulk materials.

B-G Standardized Conveyors are Belt Conveyors—soundly built—portable type (12 feet to 60 feet) and stationary type (in any length)—equipped with electric drive; supplied with gasoline engine when required—operation costs low—working capacity up to 150 tons per hour.

Our Service Department will be glad to advise you in regard to the B-G Conveyor exactly suitable to your needs. Write for interesting literature on this unusually capable labor-saving machine.

BARBER-GREENE COMPANY

515 West Park Avenue

Aurora, Illinois, U. S. A.

Southern Branch: Birmingham, Ala.

Branch Service and Sales Offices:

New York
Philadelphia
Norfolk
Salem
Hartford
Buffalo
Utica

Cleveland
Detroit
Indianapolis
Pittsburgh
Scranton
Chicago

Milwaukee
Minneapolis
St. Louis
Omaha
Kansas City
Salt Lake City

Los Angeles
San Francisco
Portland
New Orleans
Tampa
Savannah
Louisville

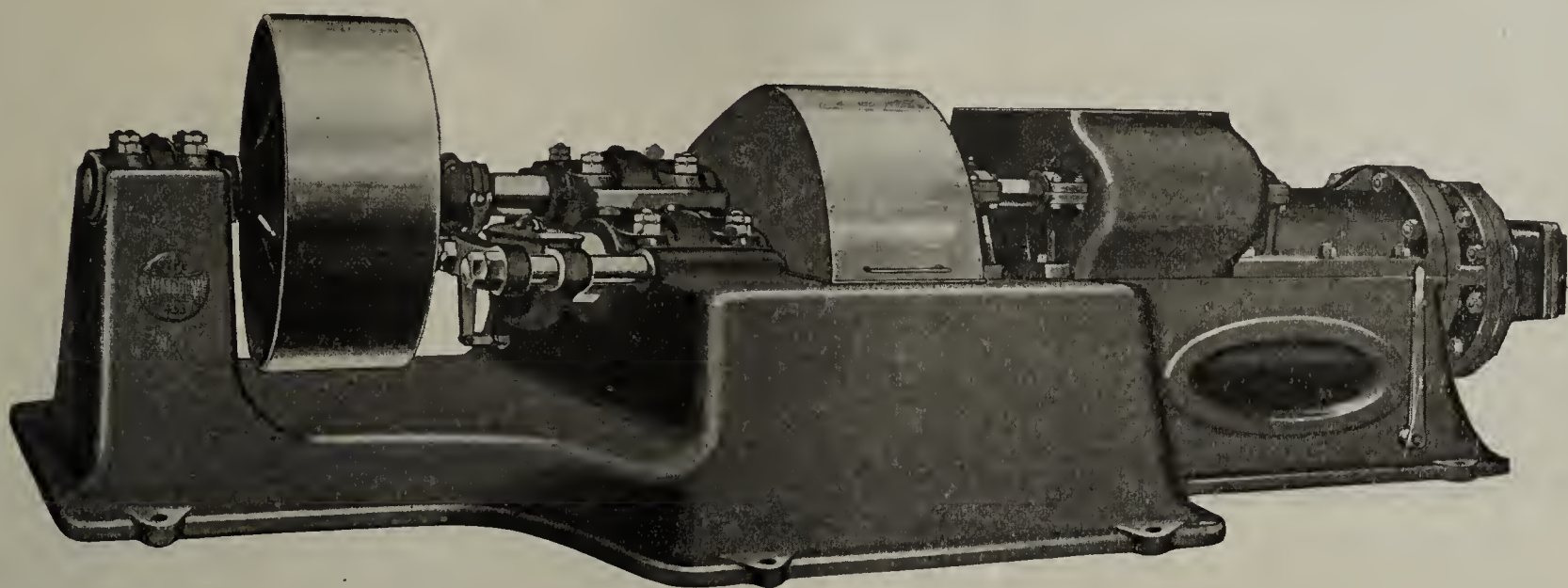
Canadian Agents—Mussens, Limited, Montreal, Winnipeg, Toronto, Vancouver.

Another labor-saving device is the B-G Self-Feeding Bucket Loader, designed for severe service in handling heavy loads. The big feature is its Rotating Disc Feeder (Patented). The discs rotate and carry material to the center where it is picked up by the buckets. The quickest and easiest method of loading material. Write for information.



ALMACOA EXPORT DEPARTMENT ALLIED MACHINERY COMPANY OF AMERICA
31 Chambers St. New York 10 N. Y. CHICAGO 10 ILL. NEW YORK

WHY THE NEW TYPE 435 MACHINE HAS CREATED SO MUCH INTEREST



TWO CASTINGS—TWO SHAFTS—TWO GEARS

Its one-piece frame, with the outboard bearing cast to the base, means that the shafting and gearing can never be thrown out of alignment.

The entire mechanism from the tip of the auger to the rear end of the driving shaft lies within this frame, there being no overhang at any point. This gives the strongest type of construction possible.

The gears, which are extra wide of face, run in oil, while the shafts are extra heavy throughout.

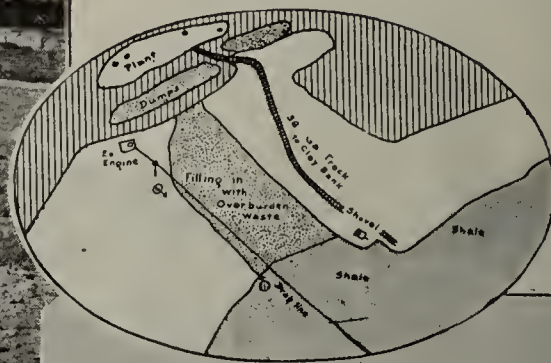
Brick and tile men who have seen this machine say that its construction embodies that which is most required in an Auger Machine, namely

MASSIVENESS AND SIMPLICITY

Detailed Information Gladly Furnished

International Clay Machinery Co.

Dayton, Ohio



These two photographs were taken at the Pittsburgh Paving Brick Company's plant and illustrate the operation of their Schofield-Burkett Excavator. In the above illustration, the scrape is removing overburden from a shale field in the fore-ground and dumping the waste into a pit left after the excavation of shale. The waste piles to within three or four feet of the top of shale bank, as indicated by arrow on photo and as detailed in pen and ink sketch.

Photo at right was taken two weeks later, from the mast shown in the above view. It pictures the dump and the face of an old pit.

Digs, mixes and delivers. Dumps automatically. Excavates several acres of clay or shale without moving machinery. Speedy—economical. Repairs easily made and inexpensive. Built extra strong for long life and heavy duty.

REMOVING overburden from shale is a necessary evil. But this expense can be minimized by the right kind of machinery.

The proof of this assertion is well demonstrated at the plant of the Pittsburgh Paving Brick Company. Their shale extends to no great depth, and is covered with a thin layer of soil and clay.

To strip this burden, they experimented several years ago, with various digging and hauling methods. Then they installed a Schofield-Burkett Excavator. They have been using it ever since. "Repairs have been light, and we have been satisfied with the installation," writes Mr. Calvin, Secretary-Treasurer.

With the aid of one man at the hoisting engine and another at the scrape, it digs, loads, conveys and, automatically dumps the material at any desired place within a large area (note above photographs). Steam is supplied from main power plant, carried through 500 feet of 2 inch line.

If the conditions outlined above are different from those at your plant, remember that the Schofield-Burkett Excavator is making good under varying conditions in clay plants throughout the country.

It displaced a different type machine at a Georgia plant, where it is stripping an over-burden of sticky red plastic surface clay. It is digging and mixing clay for a New York manufacturer, reducing operative expense and cost of labor.

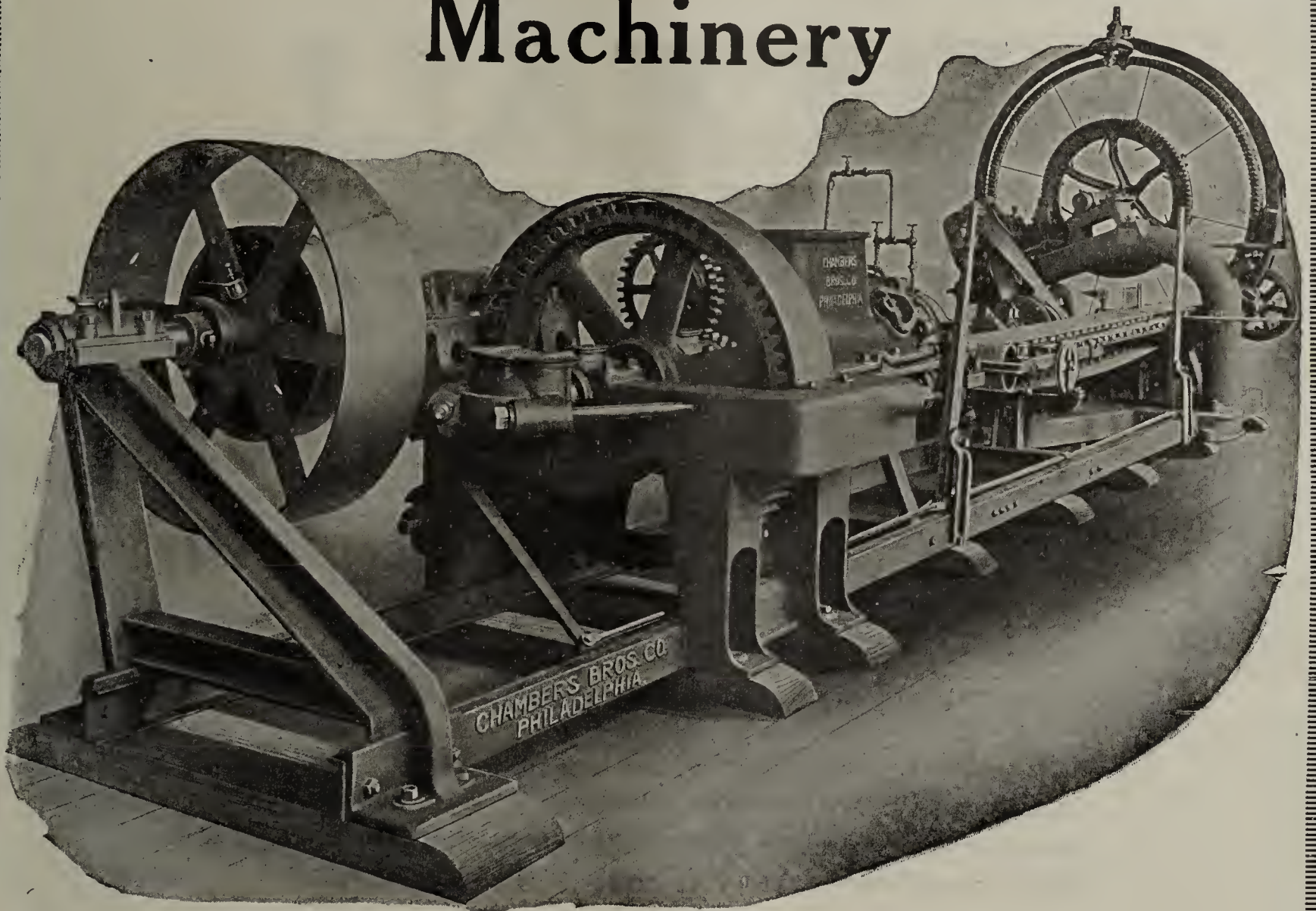
Whatever your conditions, if you have an excavating problem, write us. Our engineers will be pleased to advise you without any obligation on your part. Ask for a copy of Catalog Number 20.

Schofield-Burkett Construction Co.,

Macon, Ga.

Schofield-Burkett Excavator for Economical and Fast Stripping

The Chambers Brickmaking Machinery



Standard Pattern No. 10 Brickmaking Machine with No. 5 Rotary Side Cutter

An Auger Machine capable of making 100 standard size builders per minute, and a proportionate number of block. Will cut both brick and block thicknesses at the same time.

The No. 5 Rotary Cutter is for side cut Builders for both end-cut and side-cut Pavers—for Fire Brick and Furnace Block work.

A Cutter adaptable to different products with small expense for duplicate parts.

A Continuously Rotating Cutter of Large Capacity

Dry Pans — Crushers — Disintegrators — Granulators
and Feeders—Pug-Mills of various lengths and designs.

CHAMBERS BROS. CO., Philadelphia, Pa.

REXALL

DOUBLE — STITCHED

CONVEYOR and ELEVATOR

BELTING

Records That Mean Something

Each time we hear of a Rexall belt with a service record a block long, we are naturally proud—but it doesn't mean so much to us as some other Rexall records that we have.

Picking out several individual instances of exceptional performance is really not so much of a belt test after all. The real test comes in showing what 1000 or 2000 belts are doing—week in and week out—under varying conditions throughout the country.

We would rather tell about thousands of Rexall Belts delivering the regular dependable money-saving Rexall service than to pick out one or two instances of unusual interest.

Rexall belts can deliver the proof in both cases. Individually and collectively Rexall belts have made good. We can prove they wear longer, give less trouble and are most economical. Every time you buy belting that gives you less than the Rexall standard you lose money.

Imperial Belting Company

Factory and General Offices

Chicago

Branches: New York, Pittsburgh, Detroit, Salt Lake City.

Thews are Everywhere



Over 400 THEWS In Brick Plants

No better evidence of Thew's adaptability to brick plants can be given than the fact that over 400 Thew shovels are in use in this industry.

Through 26 years of experience in serving the brick industry Thew design and construction have been improved to meet every requirement.

We manufacture a complete line of revolving shovels and cranes—electric, gasoline and steam. Dipper capacities from $\frac{1}{2}$ to 2 cubic yards. Cranes 3 to $7\frac{1}{2}$ tons capacity.

A Profit More Than Enough To Pay the Cost of the THEW

How Thews repay their cost in brick plants is indicated by this letter received from Mr. W. N. Ashe, Van Wyck, S. C.

"The shovel gives us clay so fast we had to spend more than \$3,000 enlarging our Drying Department. The shovel has made for us, in increased production alone, a potential profit more than enough to pay for the cost of same. It is surely a little jewel."

You can cut costs with a Thew. Why not let a Thew Engineer estimate how much a Thew will save in *your* plant? No obligation on your part.



THE THEW AUTOMATIC SHOVEL COMPANY
LORAIN, OHIO

New York: 30 Church St.

Chicago: Monadnock Block

THEW Power Shovels

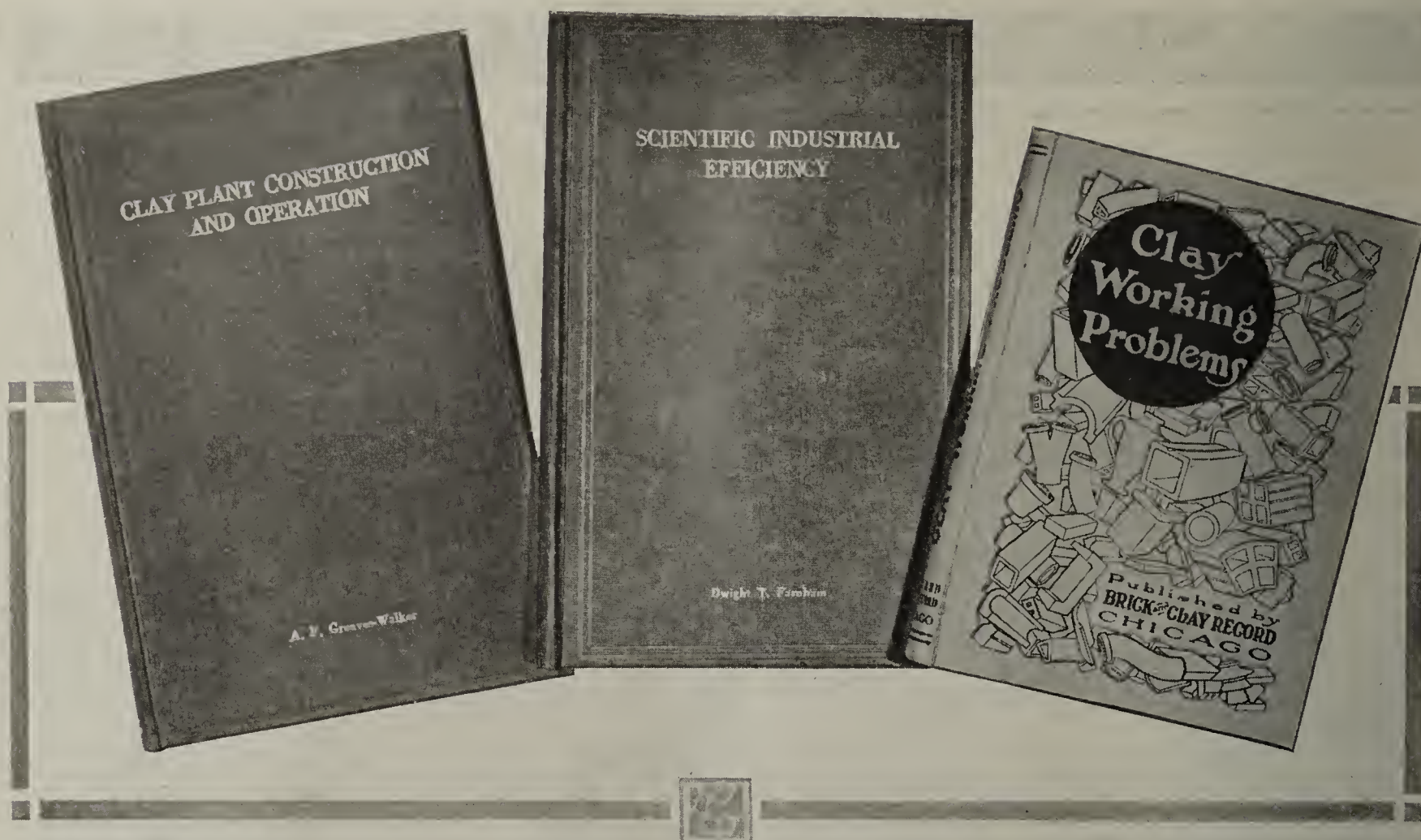
ALMACOA

EXPORT DEPARTMENT

ALLIED MACHINERY COMPANY OF AMERICA

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ALMACOA



Our Contribution to Your Library

Within the past half decade, *Brick and Clay Record* has added to the permanent collection of ceramic literature, not only in America, but also abroad, at least three noteworthy volumes in attractive cloth binding.

Most American clay products manufacturers are thoroly familiar with the situation as it concerned clayworking literature as early as five years ago. Many of the books in the average clay worker's library were of foreign production—books written by English, French and German ceramists covering clay plant practices in their respective countries—very good books in their time but wholly inadequate for the American clayworker working under conditions vastly different from his European colleagues.

Seeing the need for ceramic literature with a distinctly American viewpoint, the editors of *Brick and Clay Record* set about to supply the need. What you see in the illustration above is the result of our labors.

"Clay Plant Construction and Operation," is our most recent production. It ought to have a place as a text book in every university or college that maintains a course in ceramic engineering. It is written by A. F. Greaves-

Walker, a ceramic engineer with a wealth of practical experience in the business. The price of this handsomely bound volume is \$4.00 postpaid.

"Scientific Industrial Efficiency," by Dwight T. Farnham, a prominent industrial engineer in the clay products manufacturing industry, has now been on the market for more than two years, enjoying a phenomenal sale, not only in the clayworking industry, but also among manufacturers in many other lines. This book is considered to be a standard reference work wherever scientific industrial efficiency is being considered. The price of this book is only \$2.00 postpaid.

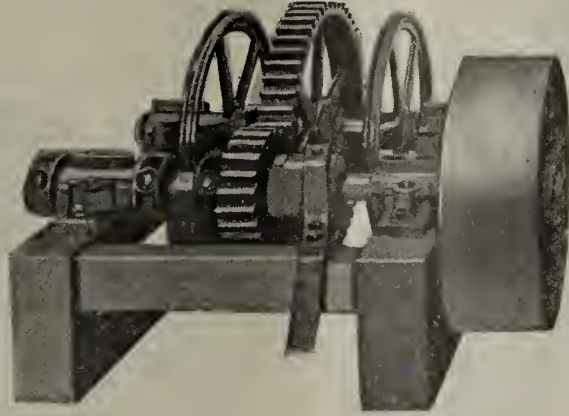
"Clayworking Problems" is to the clay plant as the veteran medical adviser is to the home. It is consulted in times of distress—when the plant or any part thereof is "sick." There is only a very limited quantity of this book left which means that if you have not secured your copy as yet you had better make no further delay. The price is only \$1.50 postpaid.

These three valuable books are our contribution to your clayworking library. Are they there in your bookcase? If not, better order at once, the missing volumes. Send your check, money order, or draft to

BRICK & CLAY RECORD'S Book Department, 610 Federal St., Chicago, Ill.

PERSONALITY AND PEP

The "Martin" Soft Mud Brick Machinery has been famous for fifty years. The "Martin" Pipe Rack Dryers and Cable Conveyor Systems have been famous for twenty years.



Driving Head for Cable Conveyor

Brick Machinery, in operation for twenty years, turning out 50,000 soft mud building brick every working day in the year.

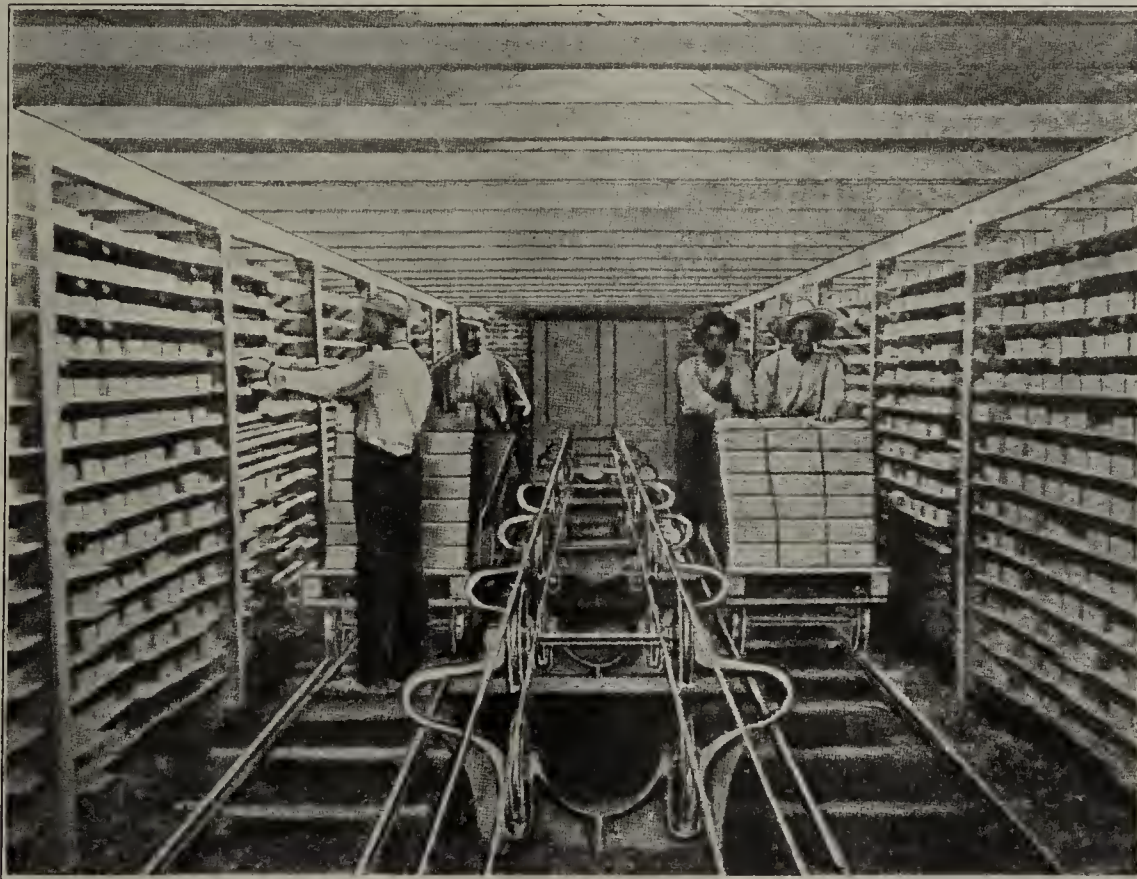
Pipe Rack Dryers uniformly drying at night the 50,000 soft mud building brick made during the day and requiring only three tons of coal.

One of the first soft mud power driven Brick Machines produced was the "Martin" of 1858.

The first Pipe Rack Dryer originated with the "Martin" of 1898.

The first Cable Conveyor System originated was the "Martin" of 1900.

That's Personality



View Showing Cable and Car System Operating in Pipe Rack Dryers.

Cable Conveyor Systems delivering brick to the Dryers or Racks at the same fixed speed per minute as produced by the Brick Machinery and only requiring two men to operate.

Car systems for transferring the dried brick from Dryers to Kilns on roller bearings. Each "car man" easily handling 10,000 to 15,000 brick daily.

That's Pep

Why experiment?
Install the original.
Imitation has been the sincerest form of flattery.
Repairs for original "Martin" machinery furnished from large stock always on hand.



Take Up for Cable Conveyor

We are now booking orders for the last six months of 1920.
Are you **thinking** of a new machine, or Dryer or Cable System—then look about you and **act**.
The wise ones are buying Now for 1920.

LANCASTER IRON WORKS

New York Office:
501 FIFTH AVENUE

Incorporated
Lancaster, Pennsylvania

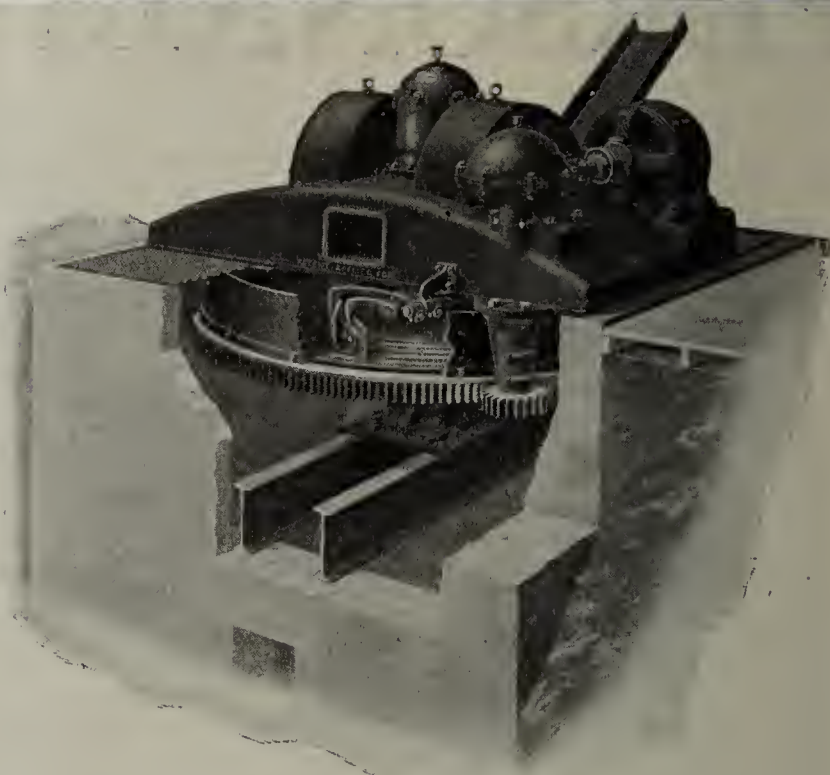
JAS. P. MARTIN, Mgr.
Clay Working Machinery Dept.

Join the Common Brick Mfrs. Association

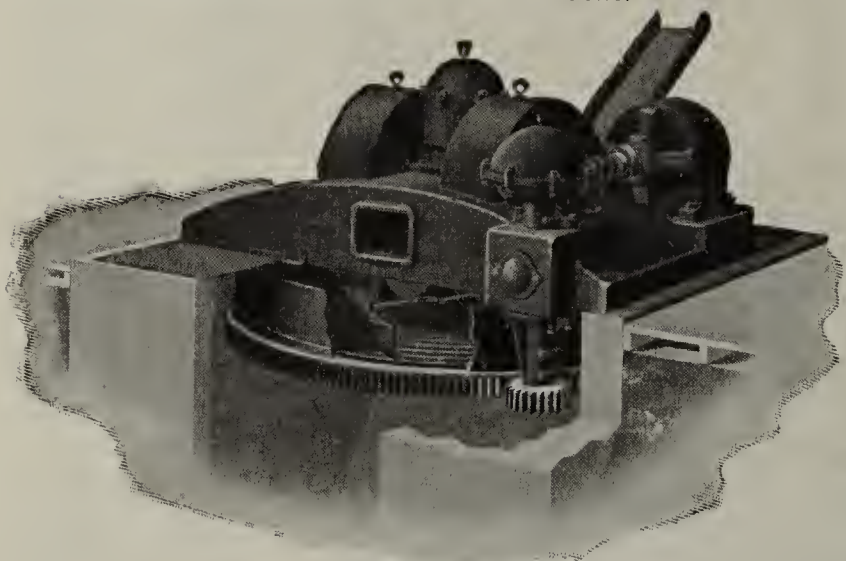
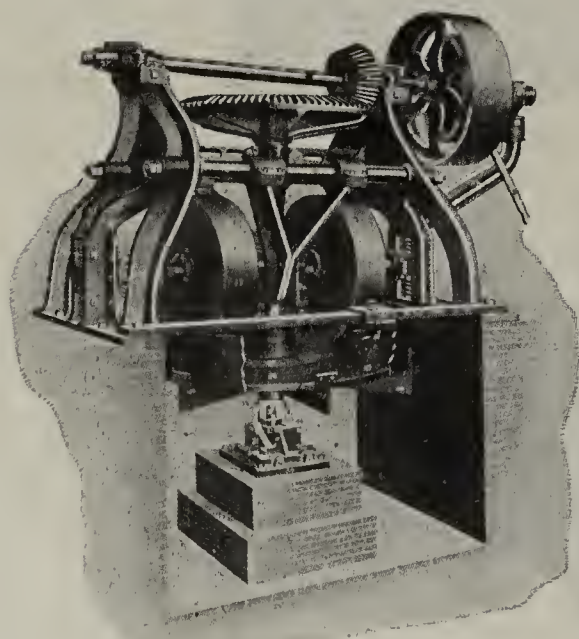
Join the National Brick Mfrs. Association



Sectional View of Rock Crusher



Dry Pan—Showing the Step Bearing Arrangement

Model A 300—Patent applied for
Dry and Semi-Dry Grinding Machine

10 Foot Dry Pan



Sewer Pipe Press

Machines for

Crushing, Grinding, Pulverizing, Empounding, Tempering and
Mixing, Elevating and Conveying All Kinds of Materials

STEAM PRESSES FOR MAKING

Sewer Pipe, Drain Tile, Hollow Blocks, etc.

All of the highest class designing and construction
are manufactured by

THE STEVENSON COMPANY

General Offices and Works:
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Some Actual Results

DISCUSSION

E. P. Poste: I think it may be of interest to say a word as to actual results. A year ago we were considering the installation of this very material in connection with a new furnace. Our old furnace, the temperature of which is maintained at 2000 degrees F., had a wall consisting of five nine-inch courses, and under ordinary conditions, the outside wall was very hot; if water would not actually boil on the surface, it would steam very noticeably. In building a new furnace we cut down from five courses of brick to three: inside course high grade fire brick, second course low grade fire brick, and an outside course of Nonpareil. If the outside temperature is an indication of the heat being lost, it is very apparent that we are losing much less heat by radiation on only a little over half of the wall thickness, it being possible to hold the hand continuously upon the outside surface of the new furnace while operating at the same temperature as the old. Aside from this we consider that we have more than saved the cost of the insulating brick by being able to substitute one course of brick where we had put in three

(From Trans. Am. Ceramic Soc. Vol. XVII)

The above statement by Mr. E. P. Poste, Ceramic Engineer of the Elyria Enameled Products Company, Elyria, Ohio, shows clearly how Nonpareil Insulating Brick would reduce the loss of heat from your kiln crowns and walls. In his case, the new walls, eighteen inches thinner than the old ones **but insulated with Nonpareil Brick**, were so cool that the hand could be held against the outside without discomfort. Could there be a better dem-

onstration of the heat insulating properties of Nonpareil Brick?

Now if your kilns are insulated with Nonpareil Brick, most of the heat now being wasted by radiation from the crowns and walls will be kept inside where it will do useful work; less fuel will be required per burn; and the temperatures in the kilns will be more uniform. Aren't these advantages sufficiently attractive to warrant investigation of Nonpareil Insulating Brick?

You can get full information and a large sample of Nonpareil Insulating Brick without any obligation. Just write and tell us you are interested.

Armstrong Cork & Insulation Company, 149 Twenty-fourth Street, Pittsburgh, Pa.

Also manufacturers of Nonpareil High Pressure Covering for steam lines, feed water heaters, etc.; Nonpareil Cork Covering for drinking water systems; Nonpareil Cork Machinery Isolation for noisy machines, and Linotile for floors in offices, residences, etc.

Nonpareil Insulating Brick

For Kiln Crowns and Walls

GARFORD



-for
**Low Cost
Ton-Mile**

Garford
TRADE MARK REG'D. U.S. PAT. OFF.

The Garford Motor Truck Co., Lima, Ohio

TRUCKS



THE kind of fuel used by the Didier-March Kiln can easily be interchanged from coal to oil or gas.

That this is an important feature has been proved during the recent coal strike. While many coal plants were forced to shut down, owners of Didier-March Kilns continued their burning uninterruptedly by changing from one fuel to another.

May we explain the many other advantages of this kiln? Data and engineering advice on request.

DIDIER-MARCH COMPANY

Perth Amboy, N. J.

Geo. A. Balz, General Manager



DIDIER-MARCH

CONTINUOUS RAILROAD TUNNEL KILN



STRONG AS A STEEL CABLE

GANDY, the original stitched COTTON DUCK BELT, has all the strength of a steel cable with the tenacity, flexibility and longevity of specially processed cotton duck.

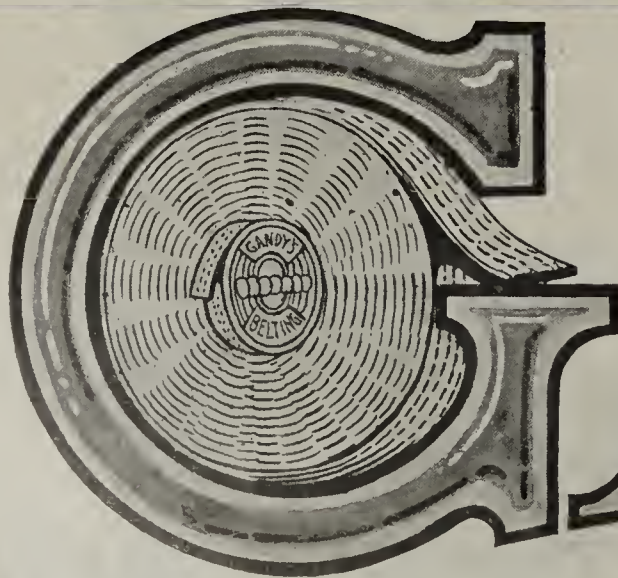
GANDY Picks Up Power Like a Magnet!

Its enviable reputation is based on the performance of nearly 40 years in the transmission and conveyor field.

GANDY engineering service goes with every belt—power or conveyor—to insure the right belt—in ply and size—for each particular job.

Orders filled promptly from mill supply house or direct.

Look for the Green Edge and **GANDY** Trade Mark.



THE GANDY BELTING COMPANY

732 West Pratt Street, Baltimore, Md.

New York Branch: 36 Warren Street

GANDY
Stitched
Cotton Duck **BELT**



Pave the Way Now for Maximum Production in 1920

THE long stroke of Marion Steam Shovels permits taking a small bite off the face of the bank and up through the various strata, assuring the proper proportion of each stratum in each dipper load. The mixture is better than if the bank were "shot down" and less grinding is required at the plant to work the material into brick. The "Marion" has earned its title "The Clay Worker's Shovel."



THE present season is at its close. Brick plant executives must now arrange for the coming year's output and consider the purchase of additional equipment.

For 1920 will be a year of extraordinary building activities. The nation today is short thousands of homes, while thousands of factory additions are also needed. There will be a great building boom and brick plants will be wholly unable to meet the demand unless they greatly increase their output.

"Good Roads" is a national slogan today. Extensive federal, state and local road-building programs assure the laying of a mileage of brick roads that will surpass by far the record of any previous year.

Brick—Brick—More Brick! That will be the cry in 1920.

How will your plant be prepared to meet the call—to fill the orders—to get your share of the profits?

Save your man-power—increase your output—make better brick—and cut your costs. Other successful brick plants have shown that it can be done. Profit by their experience. Standardize with Marion Steam Shovels.

"Digging and Mixing Clay—One Operation" is a book on clay plant production in which you'll be greatly interested. Shall we send a copy?

THE MARION STEAM SHOVEL COMPANY

Established 1884

NEW YORK

CHICAGO

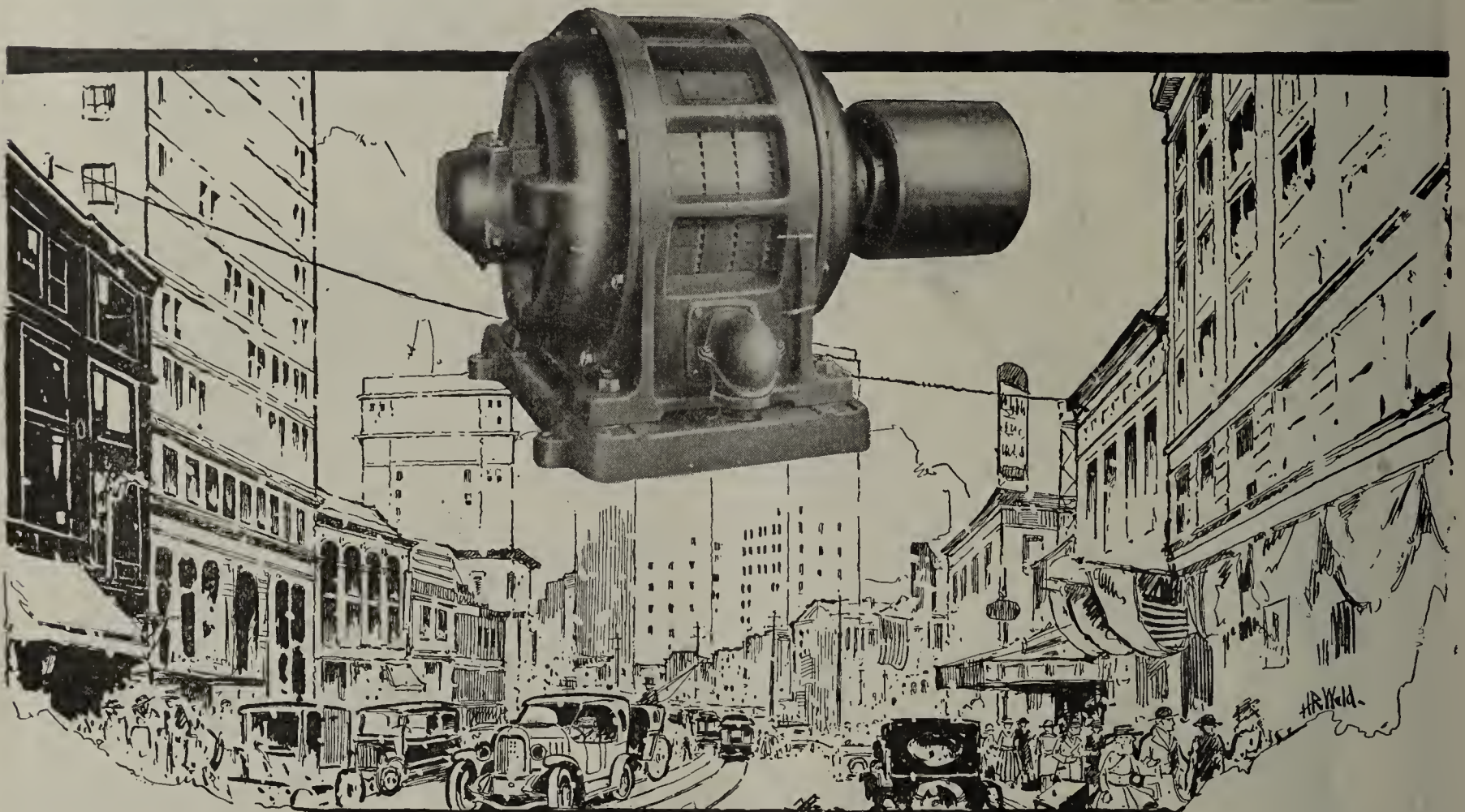
ATLANTA

SAN FRANCISCO

Marion, Ohio

Marion

Users want serviceable, durable, available G-E Motors that embody all features long experience has shown to be necessary



ATLANTA, GA.

An Able Motor

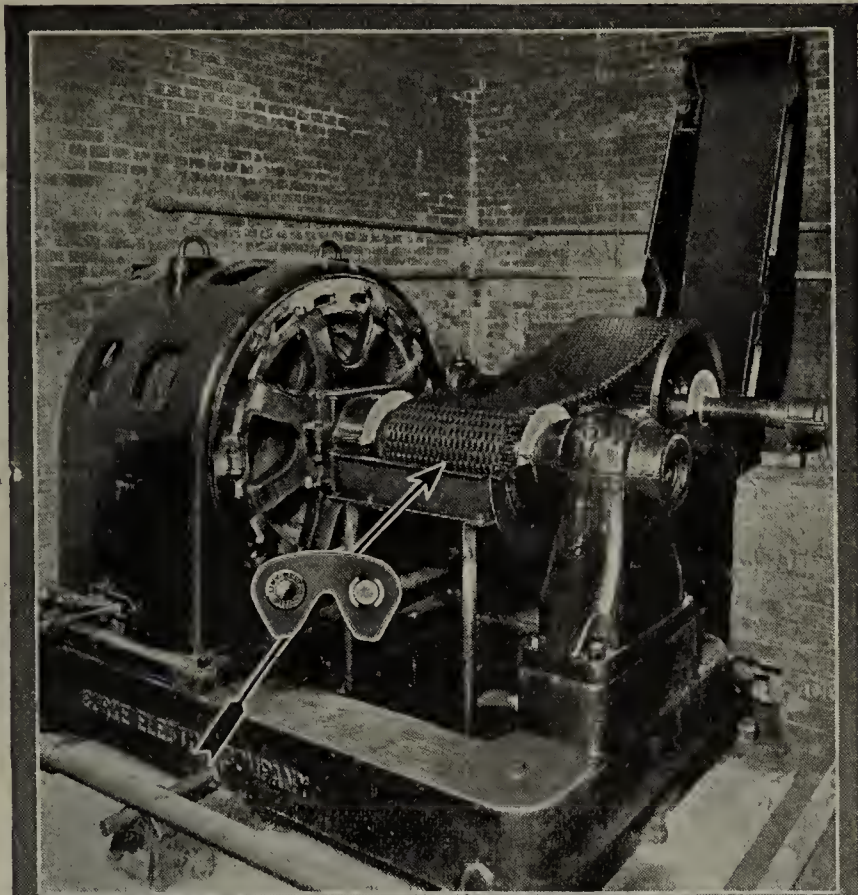
G-E polyphase induction motors have been more widely used than any others for well over a quarter century. In every industry they are known to be most dependable, even when operating under wet and gritty operating conditions.

Some of the first motors installed are still in daily operation, while many

have come through fires and floods undamaged so no one knows how durable they are—probably no one will live long enough to find out.

And these motors are available. You will find them stocked in all large cities with experts on their application near at hand to freely advise you.

General  **Electric**
 General Office **Company** Schenectady, N.Y.



Why Link-Belt Silent Chain is the Correct Drive

COULD any other form of power transmission operate with efficiency on the short centers shown in these illustrations? This drive like hundreds of others, is operating almost continuously—it has never been shut down for repairs. The plant in which it is installed depends upon its constant daily performance.

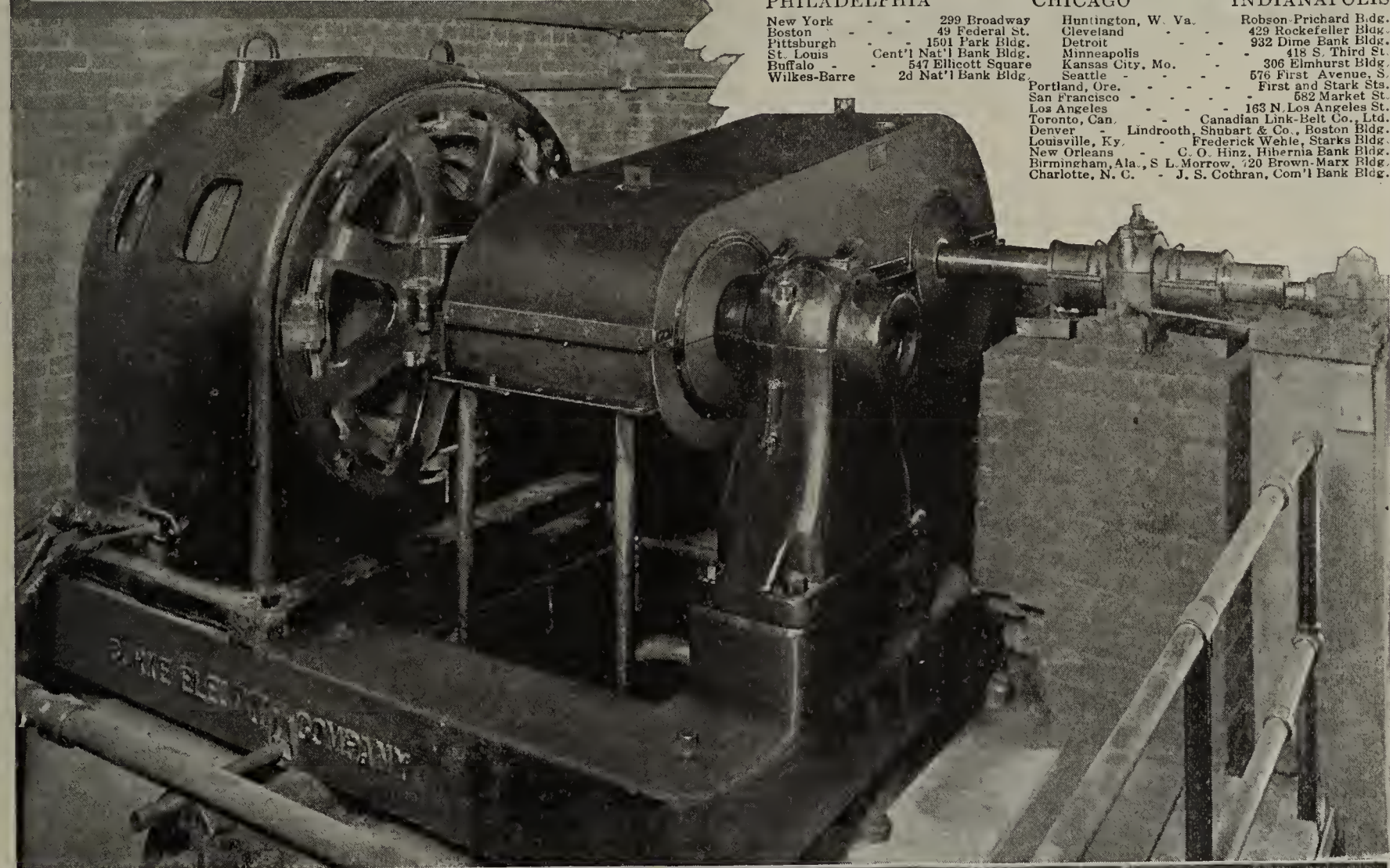
Note the drive is enclosed in the patented Link-Belt oil-tight, dust-proof casing. Lubrication automatically reaches the chain. Safety to employees is assured. And the drive is, like all Link-Belt Silent Chain Drives, 98.2% efficient.

Let us show you where you can use an efficient Link-Belt Silent Chain Drive in your plant.

LINK-BELT COMPANY

334

PHILADELPHIA	CHICAGO	INDIANAPOLIS
New York - - - 299 Broadway	Huntington, W. Va. - - - Robson-Prichard Bldg.	
Boston - - - 49 Federal St.	Cleveland - - - 429 Rockefeller Bldg.	
Pittsburgh - - - 1501 Park Bldg.	Detroit - - - 932 Dime Bank Bldg.	
St. Louis - - - Cent'l Nat'l Bank Bldg.	Minneapolis - - - 418 S. Third St.	
Buffalo - - - 547 Ellicott Square	Kansas City, Mo. - - - 306 Elmhurst Bldg.	
Wilkes-Barre - - - 2d Nat'l Bank Bldg.	Seattle - - - 576 First Avenue, S.	
	Portland, Ore. - - - First and Stark Sts.	
	San Francisco - - - 682 Market St.	
	Los Angeles - - - 163 N. Los Angeles St.	
	Toronto, Can. - - - Canadian Link-Belt Co., Ltd.	
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We Also Make

- ☐ Elevators and Conveyors
- ☐ Link-Belt and Sprockets
- ☐ Silent Chain Drives
- ☐ Truck and Tractor Chains
- ☐ Electric Hoists
- ☐ Locomotive Cranes
- ☐ Portable Loaders
- ☐ Coal and Ashes Systems
- ☐ Coal Pockets

Write for Catalogs
Place X in Square

LINK-BELT

SILENT CHAIN DRIVES

Chosen for *Simplicity!*

SAVINGS of 65 hours per burn per kiln, averaging 10 tons of coal, through the use of a Brown Pyrometer Control, are a demonstrated fact.

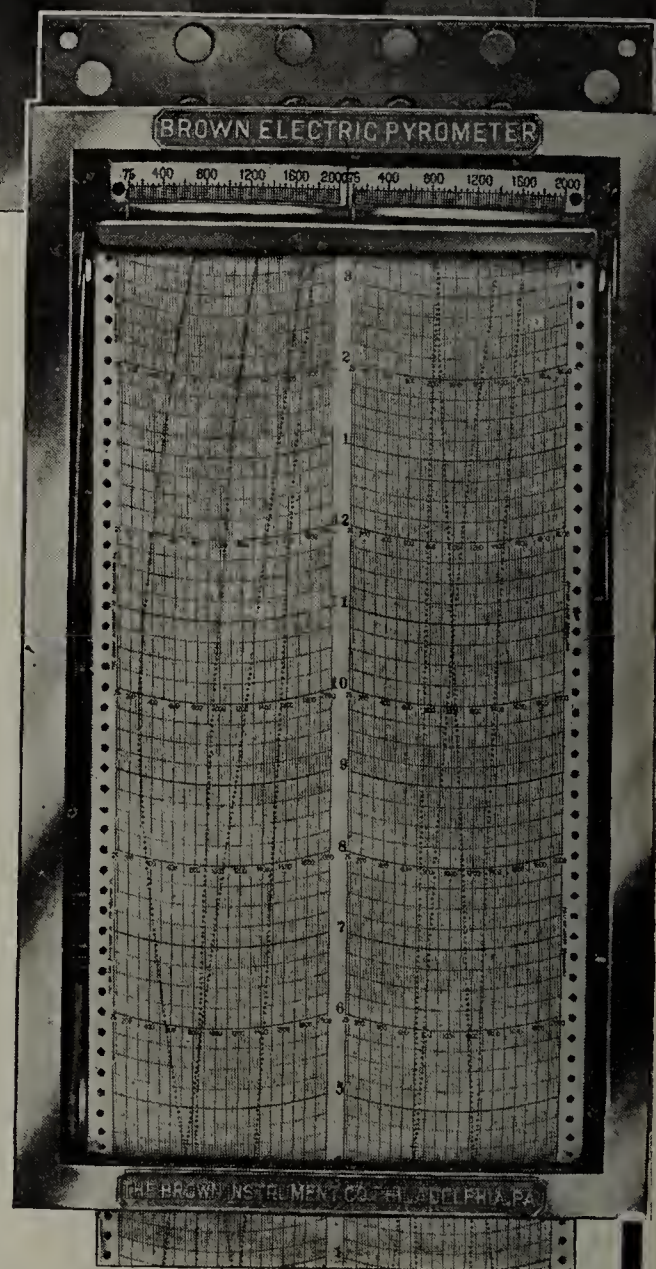
The Brown Duplex Continuous Recorder shown here checks the burners.

It records the temperature of any two kilns on one chart. It has a separate millivolt system for each thermocouple. Charts and carbon-rolls last two months.

So sturdy is the construction of this instrument, that it is quite an ordinary thing for it to operate continuously for three years without any repairs whatever, or any other attention than oiling, winding the clock mechanism once a week from the outside of case and changing the chart and ribbon-roll every two months.

Let us tell you some facts that it would pay you to know regarding this instrument and what it **has done** in the brick and clay industries.

Write today to The Brown Instrument Co., Philadelphia, or one of their District Offices in New York, Pittsburgh, Detroit, Chicago, St. Louis, Denver, San Francisco, Los Angeles or Montreal.



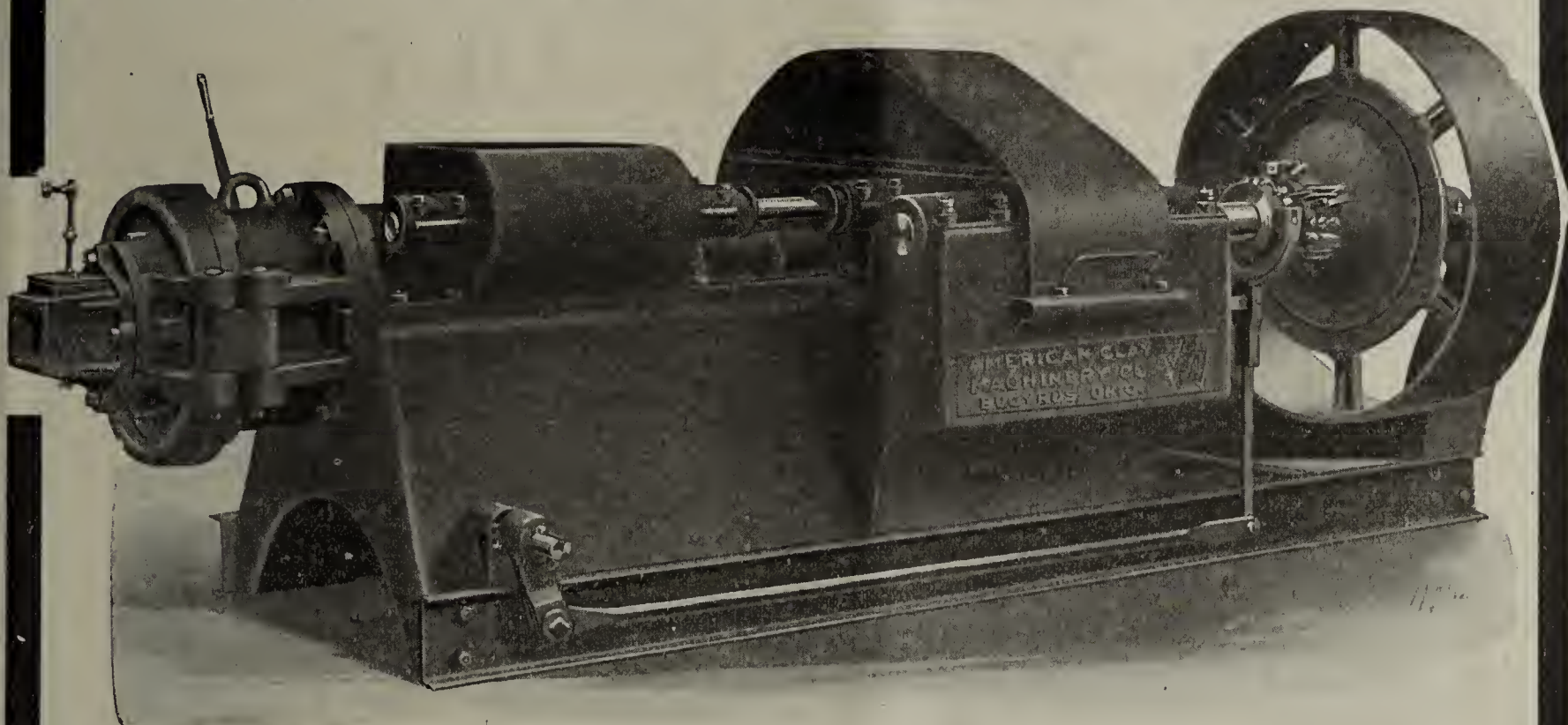
Brown Pyrometers

The World's Standard Heat Meters



American No. 290 Auger Machine

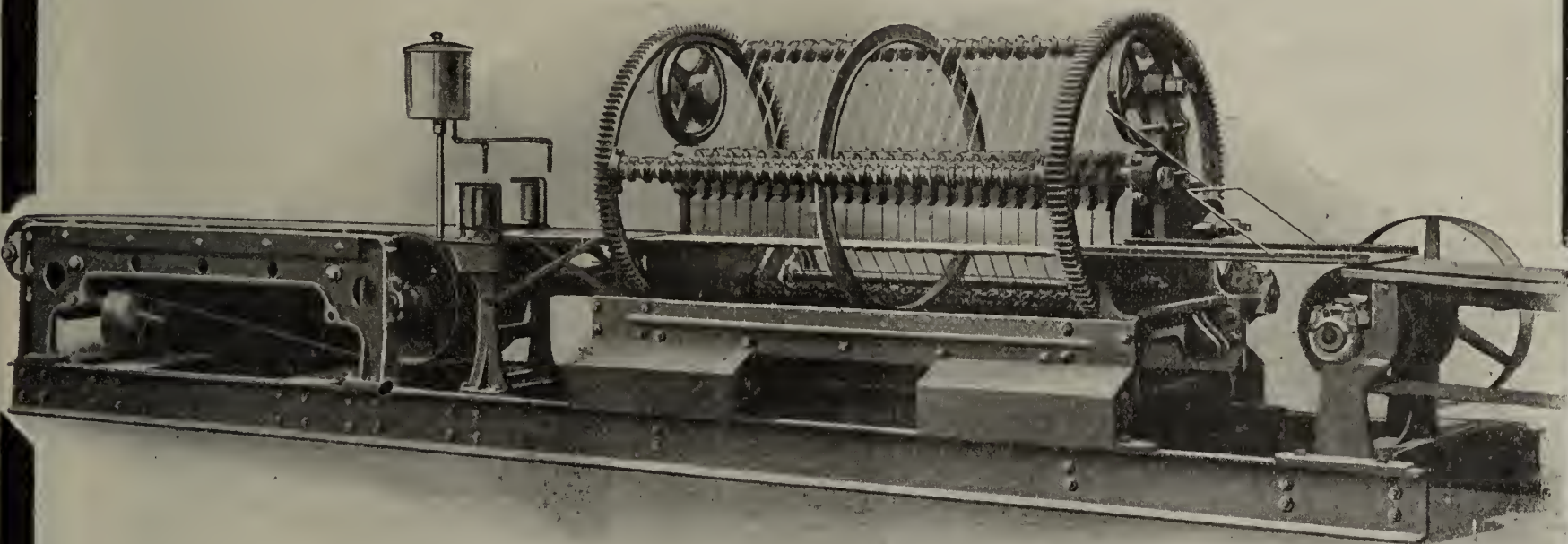
We can't tell you much about this machine in a small space, but when we say it's "The Best Auger Machine on the Market" we are saying a lot in a few words, but not a bit more than the truth. We want to send you the details that will prove it. May we? Write us for bulletin.



American No. 290 Auger Machine

American No. 350 Cutter

The complete detail of how the American No. 350 Cutter is built will interest any one who wants a good, dependable, built-well cutter that will produce satisfactorily without tampering or repairs. Write us for complete description.



American No. 350 Cutter

The American Clay Machinery Co.
Bucyrus, Ohio





The Coal Shortage May Be YOUR FAULT



A Haigh Continuous Kiln in Action

We have been up against the coal shortage a number of times in the last few years and we really ought to join forces in preventing any such trouble again.

It doesn't do any good to blame each other but really there is no use denying that much coal is wasted in burning clay products.

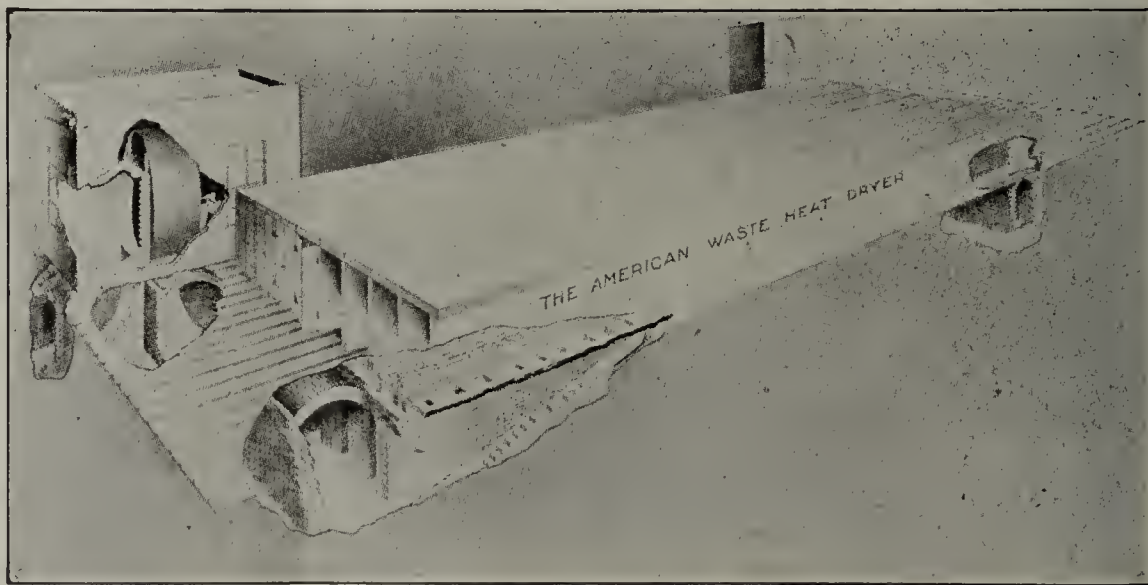
We compiled conclusive figures during the war which showed that if all the brick burned in this country were burned in Haigh Kilns there would be a saving of half of all the fuel used in burning clay products. We have those figures yet if you want

to see them. Write and we will give them to you. Also don't overlook the fact that all the coal you use in excess of what you would need in a Haigh Kiln, is absolute waste for which YOU pay. You could save all of that waste for yourself or for your customer if you cared to divide the saving. And besides you would insure that much of a coal saving for some one else. This Haigh Kiln saving is a big thing for you and for the country. Why not consider it in the interest of all?

American Waste Heat Dryer

And then there is the American Waste Heat Dryer which dries your product with the waste heat and gases from the cooling kiln. Why isn't that a good way to save and to make more profits?

It doesn't cost a cent to find out what these savings will cost you. Write for information.



American Waste Heat Dryer

The American Clay Machinery Co.
Bucyrus, Ohio

Trade Names Now in Use

on Face Brick and Other Clay Products

The purpose of this directory is two-fold: it serves to prevent a manufacturer from adopting a trade-name that is already in use—and it also helps manufacturers who use it to establish priority of claim to a name.

- ALLIANCE RUFFS**—Alliance (O.) Brick Co.
- ARMOR**—Greenpoint Fire Brick Co., Brooklyn, N. Y.
- ARTISTICO**—Capital Clay Co., Des Moines, Ia.
- ARTBRIQUE**—Yingling-Martin Brick Co., Johnsonburg, Pa.
- ATHENA**—Hocking Valley Fire Clay Co., Nelsonville, Ohio.
- BEAVERCLAY**—Beaver Clay Mfg. Co., New Galilee, Pa.
- BURLAP**—Key-James Brick Co., P. O. Alton Park, Tenn.
- CALEDONIAN**—Fiske & Co., Inc., Boston and New York.
- CITADEL**—Citadel Brick & Paving Block Co., Ltd., Quebec.
- CLAYTEX**—Walton N. Cable, New York City.
- CLAYTON MISSIONS**—Washington Brick, Lime & Sewer Pipe Co., Spokane, Wash.
- CLAYTON VELVETS**—Washington Brick, Lime & Sewer Pipe Co., Spokane, Wash.
- CLOISTER**—Western Brick Co., Danville, Ill.
- COLONIAL**—Capital Clay Co., Des Moines, Ia.
- COLUMCLAY**—Columbia Clay Co., Columbia, S. C.
- CORDOVA** (Roofing Tile)—Gladding, McBean & Co., San Francisco and Lincoln, Cal.
- CORSWEVE**—Thomas Moulding Brick Co., Chicago, Ill.
- CROWN**—Green Fire Brick Co., A. P., Mexico, Mo.
- DENISON**—Mason City (Ia.) Brick & Tile Co.
- DE LUXE**—The Standard Brick Company, Crawfordsville, Ind.
- DIAMOND**—Missouri Fire Brick Co., St. Louis, Mo.
- DORIC**—Western Brick Co., Danville, Ill.
- DUNBAR**—United Refractories Co., Uniontown, Pa.
- EGYPTIAN PAVING BLOCK**—Murphysboro (Ill.) Paving Brick Co.
- ELKCO**—Elk Fire Brick Co., St. Marys, Pa.
- ELKCO SPECIAL**—Elk Fire Brick Co., St. Marys, Pa.
- ELK LADLE**—Elk Fire Brick Co., St. Marys, Pa.
- ELK STEEL**—Elk Fire Brick Co., St. Marys, Pa.
- EMBOSTEX**—Streator (Ill.) Brick Co.
- EMPIRE**—Green Fire Brick Co., A. P., Mexico, Mo.
- EMPIRE**—Western Brick Co., Danville, Ill.
- EVERHARD ANTIQUE**—Everhard Co., Massillon, O.
- EVERHARD DOUBLE-TEXTURE**—Everhard Co., Massillon, O.
- EVERHARD FERN-LEAF**—Everhard Co., Massillon, Ohio.
- EVERLASTING**—Mason City (Ia.) Brick & Tile Co.
- FALLSTON IRON SPOTS**—Fallston Fire Clay Co., Pittsburgh, Pa.
- FALLTEX**—Fallston Fire Clay Co., Pittsburgh, Pa.
- FISKLOCK**—Fiske & Co., Inc., Boston and New York.
- FRASERCLAY**—Fraser Brick Co., Dallas, Texas.
- FUL-TONE**—Fultonham-Texture Brick Co., East Fultonham, Ohio.
- FULTONHAM-TEXTURE**—Fultonham-Texture Brick Co., East Fultonham, Ohio.
- GOTHIC**—Western Brick Co., Danville, Ill.
- GREENDALES**—Hocking Valley Pro. Co., Columbus, O.
- GREENDALE RED RUGS**—Hocking Valley Pro. Co., Columbus, O.
- GREENDALE RUGS**—Hocking Valley Pro. Co., Columbus, O.
- GRID**—Fiske & Co., Inc., Boston and New York.
- HAWK-I-TEX**—Capital Clay Co., Des Moines, Ia.
- HI-GRADE**—Southwest Building Supply Co., Springfield, Mo.
- HOCKING BLOCK**—Hocking Valley Brick Co., Columbus, O.
- HOLLAND SPLIT**—Thomas Moulding Brick Co., Chicago, Ill.
- HOMESPUN**—Thomas Moulding Brick Co., Chicago, Ill.
- INTERLOCKING TILE**—Fraser Brick Co., Dallas, Texas.
- IRONCLAY**—Iron Clay Brick Co., Columbus, O.
- KEYSTONE**—Elk Fire Brick Co., St. Marys, Pa.
- LAKE SHORE MINGLED SHADES**—The Burton-Townsend Co., Zanesville, Ohio.
- LAKE SHORE BLOCK**—The Burton-Townsend Co., Zanesville, Ohio.
- LO-GO-TE**—Loogootee Fire Clay Products Co., Inc., Loogootee, Ind.
- LO-TEX BRICK**—The Longmont (Colo.) Brick & Tile Co.
- LO-TEX TILE**—The Longmont (Colo.) Brick & Tile Co.
- LOXALL**—Exner, J. E., Coffeyville, Kan.
- M. D. ELK**—Elk Fire Brick Co., St. Marys, Pa.
- MEDAL BLOCK**—Medal Paving Brick Co., Cleveland, Ohio.
- MEXICO, MO.**—Green Fire Brick Co., A. P., Mexico, Mo.
- MONTEZUMA RED FACE**—Montezuma (Ind.) Brick Works.
- MOSAIC**—Western Brick Co., Danville, Ill.
- MUSKOGEE RUG**—Muskogee (Okla.) Vitri-fied Brick Co.
- NAVAJO**—Kansas Buff Brick & Mfg. Co., Buffville, Kan.
- NUVOGUE**—Boone (Ia.) Brick, Tile & Pav. Co.
- OLD ROSE COLONIAL**—Montezuma (Ind.) Brick Works.
- OLEAN BLOCK**—Sterling Brick Co., Olean, N. Y.
- PERSIAN SPLIT**—Thomas Moulding Brick Co., Chicago, Ill.
- "POTTRY"**—B. Mifflin Hood Brick Co., Atlanta, Ga.
- PROMENADE**—Yingling-Martin Brick Co., Johnsonburg, Pa.
- RAINBOW**—Burton Townsend Co., The, Zanesville, Ohio.
- RED ROCK RUFFS**—Auburn Shale Brick Co., Gettysburg, Pa.
- REYNOLDSVILLE**—The Reynoldsville (Pa.) Brick & Tile Co.
- ROTEX**—Elk Fire Brick Co., St. Marys, Pa.
- RUFTEX**—Thomas Moulding Brick Co., Chicago.
- RUG**—Hocking Valley Pro. Co., Columbus, O.
- RUSTIQUE ORIENTAL**—Martinsville (Ind.) Bk. Co.
- ST. MARYS**—Elk Fire Brick Co., St. Marys, Pa.
- SHALE-TEX**—Streator (Ill.) Brick Co. Sheffield Tile Co., Sheffield, Iowa.
- SHEFFIELD**—Sheffield Brick & Tile Co. and
- SIL-O-CEL**—Celite Products Co., New York City.
- SPECIAL**—Green Fire Brick Co., A. P., Mexico, Mo.
- SPEEDWAY BLOCK**—Alliance (O.) Clay Prod. Co.
- STANBRIK**—Edward Stanton, Cleveland, Ohio.
- STANDARD**—Green Fire Brick Co., A. P., Mexico, Mo.
- STRANGER REDS**—The Reynoldsville (Pa.) Brick & Tile Co.
- STAR FIRE BRICK**—Star Clay Products Co., San Antonio, Tex.
- STAR FIRE PROOF HOLLOW BUILDING TILE**—Star Clay Products Co., San Antonio, Tex.
- SYKESVILLE**—The Reynoldsville (Pa.) Brick & Tile Co.
- TAPESTRY**—Fiske & Co., Inc., Boston and New York.
- TAVERN BRICK**—Metropolitan Pav. Brick Co., Canton, O.
- TELCO**—Terra Cotta Products Co., Inc., Rio Vista, Calif.
- TEXTUR**—Thomas Moulding Brick Co., Chicago, Ill.
- TIFFANY**—Thomas Moulding Brick Co., Chicago, Ill.
- TORONTO**—Toronto Fire Clay Co., Toronto, O.
- TOWNSEND BLOCK**—The Burton-Townsend Co., Zanesville, Ohio.
- TURKESTAN**—Beaver Clay Mfg. Co., New Galilee, Pa.
- TURKO**—Rochester (Pa.) Clay Products Co.
- UNITED**—United Refractories Co., Uniontown, Pa.
- U. R. CO.**—United Refractories Co., Uniontown, Pa.
- U-TEX**—Fultonham-Texture Brick Co., East Fultonham, Ohio.
- VERTEX**—Beaver Clay Mfg. Co., New Galilee, Pa.
- VITRI-CRAFT**—Schuylkill Valley Vitri-fied Products Co., Oaks, Montgomery Co., Pa.
- VOLCANIC**—Beaver Clay Mfg. Co., New Galilee, Pa.
- WIRE-CUT LUG BRICK**—Dunn Wire-Cut Lugs Brick Co., Conneaut, Ohio.

Brick and Clay Record Buyers' Directory of Manufacturers of Machinery, Equipment and Supplies

See Table of Contents Page for Advertisers Directory

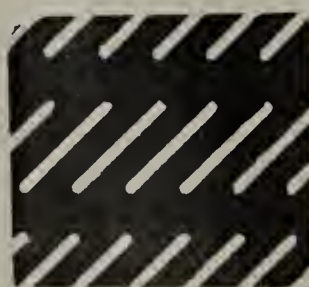
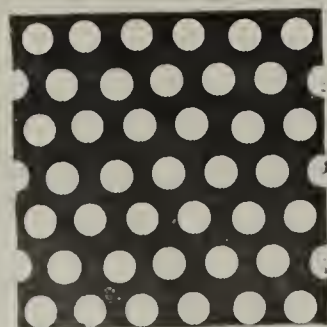
Aerial Tramways. Broderick & Bascom Rope Co Leschen & Sons Rope Co., A. Anti-Friction Metals. Hiertz Metal Co., Theo. Toronto Fdry. & Mach. Co. Automobile Trucks. Federal Motor Truck Co. Garford Motor Truck Co. Kissel Motor Car Co. Mutual Truck Co. Selden Truck Sales Co. Babbitt Metal. Hiertz Metal Co., Theo. Toronto Fdry. & Mach. Co. Barium Carbonates. Rollin Chemical Co. Roessler Hasslacher Chem. Co. Barrows and Trucks. American Clay Machinery Co. Arnold-Creager Co. Bonnot Co. Chambers Bros. Co. Chase Fdry. & Mfg. Co. Fate-Root-Heath Co. Freese & Co., E. M. International Clay Mch. Co. Lancaster Iron Works, Inc. Manufacturers Equipment Co. Robinson, Frank H. Steele & Sons, J. C. Toronto Fdry. & Mach. Co. Weller Mfg. Co. Wellington Machine Co. Barytes, Carbonate of. Roessler Hasslacher Chem. Co. Rollin Chemical Co. Bearings. Caldwell & Son Co., H. W. Hill Clutch Co., The Belting. Gandy Belting Co. Goodyear Tire & Rubber Co. Imperial Belting Co.	Main Belting Co. Rosendale-Reddaway Belting Co. Scandinavia Belting Co. Stanley Belting Co. U. S. Rubber Co. Belting, Silent Chain. Link-Belt Company. Morse Chain Co. Belt Conveyors. American Clay Machinery Co. Caldwell & Son Co., H. W. Gandy Belting Co. Goodyear Tire & Rubber Co. Imperial Belting Co. International Clay Mch. Co. Lancaster Iron Works, Inc. Link-Belt Company. Manufacturers Equipment Co. Morse Chain Co. Rosendale-Reddaway Belting Co. Scandinavia Belting Co. Stanley Belting Co. U. S. Rubber Co. Weller Mfg. Co. Wellington Machine Co. Belt Fasteners Crescent Belt Fastener Co. Flexible Steel Lacing Co. Belt Preservative. Cling-Surface Co. Belt Tighteners. Hill Clutch Co., The Blasting Accessories. Atlas Powder Co. E. I. duPont de Nemours & Co. Blasting Powder. Atlas Powder Co. E. I. duPont de Nemours & Co.	Boilers. (See Engines and Boilers) Boiler Insulation. Armstrong Cork & Insulation Co. Celite Products Co. Brick Conveyors. Bonnot Co. Chambers Bros. Co. Link-Belt Company. Manufacturers Equipment Co. Mathews Gravity Carrier Co. Brick Handling Machinery. American Clay Machinery Co. Mathews Gravity Carrier Co. Brick (Insulating). Celite Products Co. Brick Machines. (See "Dry Press," "Stiff-Mud" and "Soft-Mud.") Buckets, Dredging and Excavating. Ball Engine Co. Bucyrus Company Marion Steam Shovel Co., The Buckets, Elevator. Hendrick Manufacturing Co. Link-Belt Company Robinson, Frank H. Cables. Broderick & Bascom Rope Co. Leschen & Sons Rope Co., A. Robinson, Frank H. Waterbury Co. Cable Conveyors. Arnold-Creager Co. Broderick & Bascom Rope Co. Caldwell & Son Co., H. W. Leschen & Sons Rope Co., A.	Carbonate of Barytes. Roessler Hasslacher Chem. Co. Arnold-Creager Co. Rollin Chemical Co. Cars. American Clay Machinery Co. Biehl Iron Works. Chase Fdry. & Mfg. Co. Conkey Co., H. D. Dee Co., Wm. E. Fate-Root-Heath Co. Hendrick Manufacturing Co. International Clay Mch. Co. Fate Company, J. D. Koppel Industrial Car and Equipment Co. Lancaster Iron Works. 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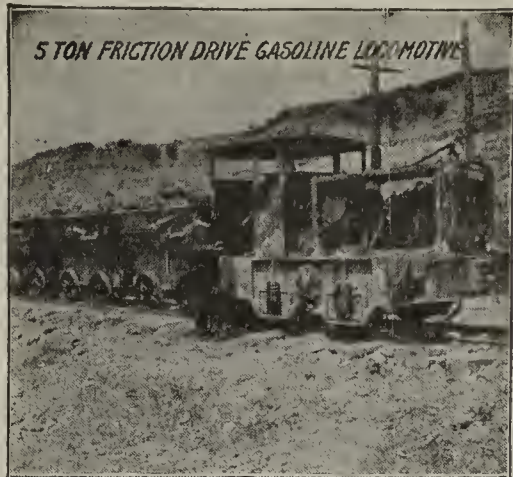
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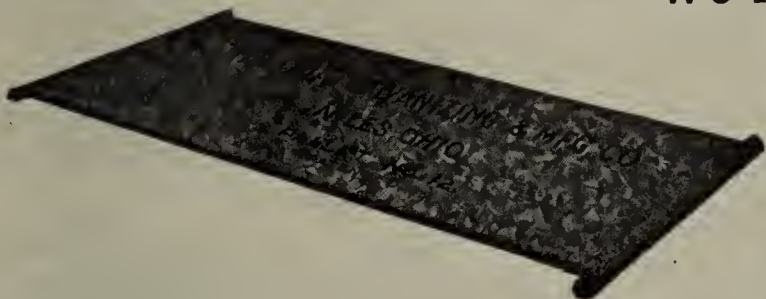
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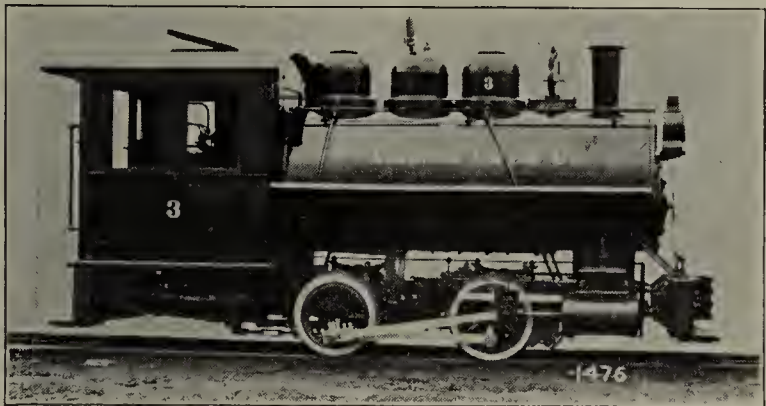


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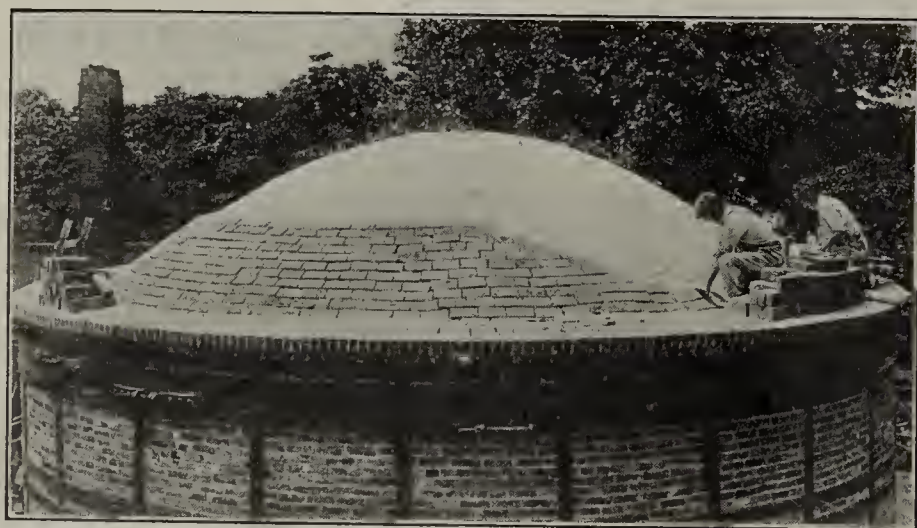
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			Feed Water Heaters. Canton Grate Co. Freese & Co., E. M.	Gas Producers. International Clay Machy. Co.	Holds. American Clay Machy. Co. Bonnot Co. Chambers Bros. Co. Fate-Root-Heath Co. Godfrey Conveyor Co. International Clay Machy. Co. Lancaster Iron Works, Inc. Link-Belt Company. Manufacturers Equipment Co. Weller Mfg. Co. Wellington Machine Co.
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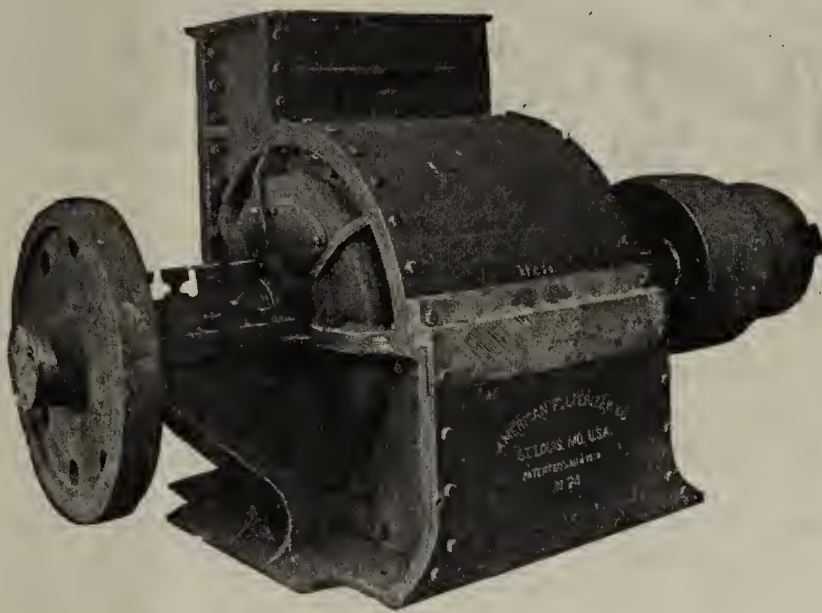
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by means of the

Leeds & Northrup Optical Pyrometer

This instrument measures the temperature of the spot at which it is sighted. By sighting upon the protection tube of a thermocouple, inaccuracies in the indications of the latter can be detected. Leeds & Northrup Optical Pyrometers were used in this manner by U. S. Army Inspectors for checking thermocouple equipments in plants throughout the country.

The optical pyrometer can be carried from place to place and successive calibrations made much more quickly than by means of a standard thermocouple inserted near the working couple.

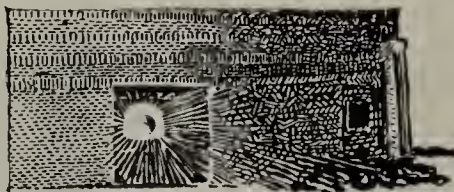
The optical pyrometer is also used to explore furnace interiors, thus ascertaining whether or not the temperatures indicated by the thermocouples are representative.

Nearness to the hot object or large areas to sight at are not required. Color-blindness and similar defects of vision do not vitiate results, as different observers agree within 10°F.

The Leeds & Northrup Optical Pyrometer, complete with battery, rheostat and milliammeter in a case to be slung from the shoulder, is sent, subject to return in ten days or payment in twenty days to anyone supplying good references.

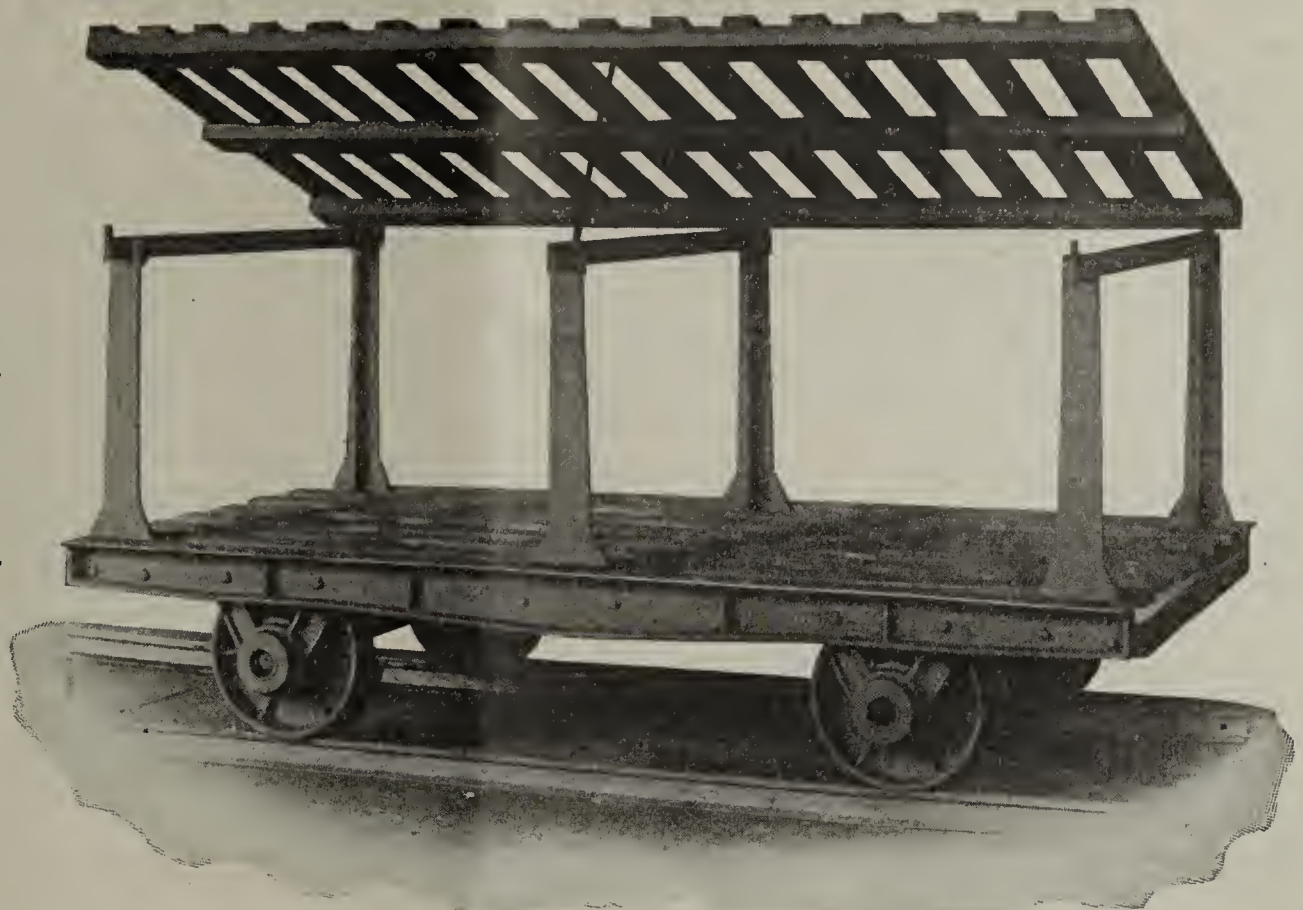
No. 8600 Optical Pyrometer, range 1100 to 3500°F..... \$105.25
No. 8610 Optical Pyrometer, range 1100 to 3200°F..... 184.25

THE LEEDS & NORTHRUP CO., 4909 Stenton Ave., Philadelphia, Pa.



We Make
DRYER CARS
of Any Size
and Description
TRANSFER
CARS
TURNTABLES
WHEEL
BARROW
WHEELS

Send for our Booklet
and let us figure on
your requirements.



PETTIGREW FOUNDRY CO.
 HARVEY, ILLINOIS

STEELE CLAY WORKING MACHINERY

For Plants of Various Capacities, From Smallest to Largest.

Five sizes of Brick Machines, together with the Side Cutters and End Cutters that you have heard about.

Pug Mills, Crushers, Disintegrators, Hoists, Lift Cars, Clay Cars, Block Machines, Tile Machines, Etc.

J. C. STEELE & SONS - Statesville, No. Carolina

Western Representative: Geo. H. Smith, 3309 W. 37th. St., Kansas City, Missouri

Northern Agents: The Manufacturers Equipment Co., Dayton, Ohio

Eastern Agents: Carter Engineering Co., 39 Cortlandt St., New York City

Buyers' Directory of Manufacturers—Continued

Rheostats (For Testing Blasting Machines). E. I. duPont de Nemours & Co.	Screens (Clay and Cement). American Clay Machy. Co. Bonnot Co. Chase Fdry. & Mfg. Co. Chambers Bros. Co. Fate-Root-Heath Co. Freese & Co., E. M. Harrington & King Perforating Co. Hendrick Mfg. Co. International Clay Mch. Co. Lancaster Iron Works. Link-Belt Company. Schofield-Burkett Cons. Co. Stevenson Co. Weller Mfg. Co.	Shovels (Power). Ball Engine Co. Bucyrus Company. Marion Steam Shovel Co., The Link-Belt Company Thew Automatic Shovel Co. Osgood Co.	Steel Pallets. Lancaster Iron Works, Inc. Ohio Galvanizing & Mfg. Co.	Stokers. Westinghouse Electric & Mfg. Co.	Storage Batteries. Electric Storage Battery Co.	Supplies. American Clay Machy. Co. Arnold-Creager Co. Bonnot Co. Chambers Bros. Co. Freese & Co., E. M. International Clay Mch. Co. Lancaster Iron Works Manufacturers Equipment Co. Robinson, Frank H. Steele & Sons, J. C. Stevenson Co. Toronto Fdry. & Mach. Co. Weller Mfg. Co.	Time & Operation Recorder. Brown Instrument Co.	Turntables. American Clay Machinery Co. International Clay Mach. Co. Lancaster Iron Works Robinson, Frank H. Toronto Fdry. & Mach. Co.
Roofing Tile Machinery. American Clay Machy. Co. Bonnot Co. Fate-Root-Heath Co. Freese & Co., E. M. International Clay Mch. Co.	Screw Conveyors. Caldwell & Son Co., H. W.	Silent Chain Drives. Link-Belt Company. Morse Chain Co.	Tanks and Tank Towers. Caldwell Co., Inc., W. E. Hendrick Manufacturing Co. Lancaster Iron Works, Inc. Tri-State Engineering Co.	Tires. Goodyear Tire & Rubber Co.	Transmission Machinery. Hill Clutch Co.	Trucks. Chase Fdry. & Mfg. Co. Steele & Sons, J. C. Toronto Fdry. & Mach. Co. Weller Mfg. Co.	Trucks (Motor). Federal Motor Truck Co. Garford Motor Truck Co. Kissel Motor Car Co. Mutual Truck Co. Selden Truck Sales Co.	Trucks (Industrial, Electric). Elwell-Parker Electric Co. Koppel Industrial Car & Eq. Co.
Rope Drives. Hill Clutch Co., The	Sewer Pipe Machinery. American Clay Machy. Co. Bonnot Co. Manufacturers Equipment Co. Stevenson Company. Toronto Fdry. & Mach. Co.	Sieves, Nozzles and Runner Brick Machy. Baird Machine & Mfg. Co.	Temperature & Pressure Regulators. Taylor Instrument Companies	Thermometers. Bristol Co. Brown Instrument Co. Engelhard, Chas. Price Electric Co. Manufacturers Equipment Co. Taylor Instrum't Companies Thwing Instrument Co.	Tile Machinery. American Clay Machy. Co. Arnold-Creager Co. Bonnot Co. Chambers Bros. Co. Fate-Root-Heath Co. Freese & Co., E. M. International Clay Mch. Co. Robinson, Frank H. Steele & Sons, J. C.	Tramways (Aerial Wire Rope). Broderick & Bascom Rope Co. Link-Belt Company.	Transmissions, Silent Chain. Link-Belt Company. Morse Chain Co.	Winding Drums. American Clay Machy. Co. Arnold-Creager Co. Fate-Root-Heath Co. Wellington Machine Co.
Rope (Wire and Manila). Broderick & Bascom Rope Co. Leschen & Sons Rope Co. Manufacturers Equipment Co. Robinson, Frank H. Waterbury Co.	Rotary Dryers. Lancaster Iron Works, Inc.	Smoke Consumers. Furnace Gas-Producer Co.	Soft Mud Brick Machines. American Clay Machy. Co. Arnold-Creager Co. Bonnot Co. Chambers Bros. Co. International Clay Mch. Co. Lancaster Iron Works. Manufacturers Equipment Co. Robinson, Frank H. Wellington Machine Co.	Stacks. Hendrick Manufacturing Co. Lancaster Iron Works, Inc. Tri-State Engineering Co.	Stiff Mud Brick Machines. American Clay Machy. Co. Arnold, Creager Co. Bonnot Co. Chambers Bros. Co. Fate-Root-Heath Co. Freese & Co., E. M. International Clay Mch. Co. Robinson, Frank H. Steele & Sons, J. C.	Tramways (Aerial Wire Rope). Broderick & Bascom Rope Co. Link-Belt Company.	Transmissions, Silent Chain. Link-Belt Company. Morse Chain Co.	Wagon and Truck Loaders. Link-Belt Company.
Rubber Goods. Goodyear Tire & Rubber Co.	Shafting. Hill Clutch Co., The Caldwell & Son Co., H. W.	Sprockets. Caldwell & Son Co., H. W. Link-Belt Company Morse Chain Co. Union Chain & Mfg. Co.	Temperature & Pressure Regulators. Taylor Instrument Companies	Thermometers. Bristol Co. Brown Instrument Co. Engelhard, Chas. Price Electric Co. Manufacturers Equipment Co. Taylor Instrum't Companies Thwing Instrument Co.	Tile Machinery. American Clay Machy. Co. Arnold-Creager Co. Bonnot Co. Chambers Bros. Co. Fate-Root-Heath Co. Freese & Co., E. M.	Tramways (Aerial Wire Rope). Broderick & Bascom Rope Co. Link-Belt Company.	Transmissions, Silent Chain. Link-Belt Company. Morse Chain Co.	Watchman's Clocks. Hardinge Bros., Inc. Taylor Instrument Companies
Sand Lime Brick Machinery. American Clay Machy. Co. Manufacturers Equipment Co.	Sheaves. Hill Clutch Co., The Tri-State Engineering Co.	Stacks. Hendrick Manufacturing Co. Lancaster Iron Works, Inc. Tri-State Engineering Co.	Temperature & Pressure Regulators. Taylor Instrument Companies	Thermometers. Bristol Co. Brown Instrument Co. Engelhard, Chas. Price Electric Co. Manufacturers Equipment Co. Taylor Instrum't Companies Thwing Instrument Co.	Tile Machinery. American Clay Machy. Co. Arnold-Creager Co. Bonnot Co. Chambers Bros. Co. Fate-Root-Heath Co. Freese & Co., E. M.	Tramways (Aerial Wire Rope). Broderick & Bascom Rope Co. Link-Belt Company.	Transmissions, Silent Chain. Link-Belt Company. Morse Chain Co.	Wagon and Truck Loaders. Link-Belt Company.
Serapers, Plows and Clay Gatherers. Eagle Iron Wks. Co. Sauerman Bros. Schofield-Burkett Cons. Co. Toronto Fdry. & Mach. Co.	Shovels (Hand). Conneaut Shovel Co.	Stiff Mud Brick Machines. American Clay Machy. Co. Arnold, Creager Co. Bonnot Co. Chambers Bros. Co. Fate-Root-Heath Co. Freese & Co., E. M. International Clay Mch. Co. Robinson, Frank H. Steele & Sons, J. C.	Temperature & Pressure Regulators. Taylor Instrument Companies	Thermometers. Bristol Co. Brown Instrument Co. Engelhard, Chas. Price Electric Co. Manufacturers Equipment Co. Taylor Instrum't Companies Thwing Instrument Co.	Tile Machinery. American Clay Machy. Co. Arnold-Creager Co. Bonnot Co. Chambers Bros. Co. Fate-Root-Heath Co. Freese & Co., E. M.	Tramways (Aerial Wire Rope). Broderick & Bascom Rope Co. Link-Belt Company.	Transmissions, Silent Chain. Link-Belt Company. Morse Chain Co.	Wagon and Truck Loaders. Link-Belt Company.



RAINBOW BELTING

After the storm—the rainbow.
After the usual run of transmission troubles and belting experiments—Rainbow Friction Surface Belting.
The engineer will tell you why.

**“The Right Belting
in the Right Place.”**

United States Rubber Company



OSGOOD 18

THE HIGH REACH of the OSGOOD "18" $\frac{3}{4}$ -yd. Traction Revolving Steam Shovel enables the Brick and Tile manufacturers to get the different strata deposits properly mixed at one operation, besides getting it quicker and at a much lower cost.

Low operating and maintenance cost combined with large capacity makes the OSGOOD "18" a worthwhile investment.

Send for our New General Catalog E-1.
Revolving and Railroad Types $\frac{3}{4}$ to 6 cu. yds.

THE OSGOOD COMPANY
MARION, OHIO

"What's the Use"

Post Brothers Tile Company, Commerce, Mo., are altogether right in their decision. What's the use of continuing the classified ad a second insertion if all the equipment is disposed of from once running? Their letter follows:

"It is very thoughtful in you to suggest that we continue our Ad, but what's the use, when we have already sold both the Crusher and the Dump Car at the price advertised?

"You ought to know that it is seldom necessary to repeat an ad in Brick & Clay Record."

Eight cents per word for one insertion, and six cents per word for each additional insertion. Every other Tuesday "Brick and Clay Record" goes to practically every clay-working plant in the country. Send your order now.

Brick and Clay Record
610 Federal Street Chicago

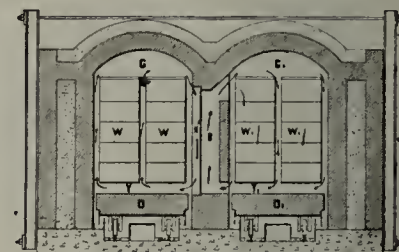
In the Service of Better Burning

Greater utilization of fuel and a corresponding lower production cost is an important factor in the operation of the Zwermann Twin Tunnel Kiln.

Loss of heat through radiation is reduced to a degree not attainable in a single tunnel kiln. Heat from the cooling ware of one tunnel is absorbed by the ware in the water-smoking and preheating zone of the other. No danger of getting the receiving end too hot. These are three important exclusive features of this kiln.

Compared with a single tunnel of the same capacity, the Zwermann Kiln requires less brick, one-half the buck stays, less space and no side or return track.

The foregoing and many other latest improvements in kiln construction are fully covered in an illustrated circular. Ask for it.



“Z”

ZWERMANN COMPANY, ROBINSON, ILLINOIS

Carl H. Zwermann, Pres. and Gen. Mgr.

WHAT DO YOU DO?

It is probable that a new problem presents itself to you—or to some of your associates at least once each week. Do you solve it satisfactorily or do you let it slide? Why not insure yourself against such incidents? Start a factory library, fill it with a few choice books that deal with your plant and manufacturing problems. From this list you should be able to select a splendid assortment.

Bricks and Tiles.....	\$1.50	Garages and Motor Boat Houses.....	\$1.50
Brick Drying (English edition).....	1.00	Glazer's Book.....	1.25
Bricklaying, Rudiments of Practical.....	.75	Hollow Tile House, The.....	2.50
Bricklaying System.....	3.00	How to Analyze Clay.....	2.00
Brick Work (Walker).....	.65	How to Build Up Furnace Efficiency.....	1.00
Brickwork and Masonry.....	3.00	Land Drainage.....	1.50
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Ceramic Industries—A Treatise On (E. Bourry).....	7.25	Modern Brickmaking.....	6.00
Clay and Pottery Industries.....	6.00	Notes on Pottery Clays.....	2.00
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Select those books that you want the most, and we will send them to you postpaid upon receipt of price. No books sent on approval. All foreign books subject to 15% import duty.

Brick and Clay Record

610 Federal St.,
Chicago, Illinois

Pyrometers

that are cheaper in the end—

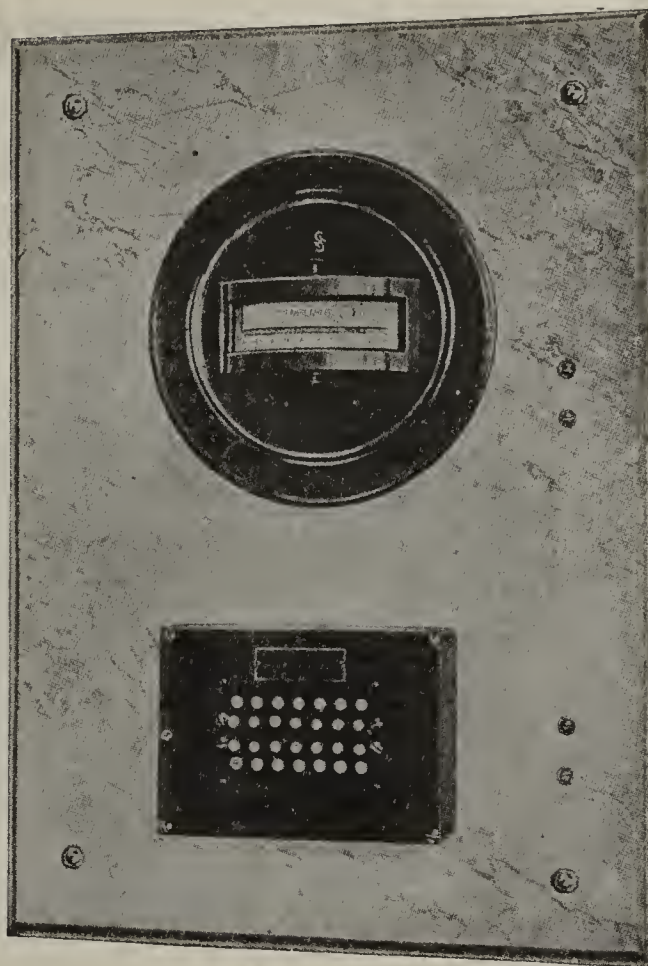
It is not what a pyrometer costs, but what it ultimately *does*, that determines its real cost value.

Engelhard Le Chatelier The Ultimate Pyrometers

more than pay for themselves in service given. Heraeus Thermo-Couples are of exceptional purity, register accurately at all times and are strictly interchangeable.

Catalogue "P" will save you money. Write for it.

Charles Engelhard
30 Church Street New York



DU PONT AMERICAN INDUSTRIES

Nine Good Reasons for Electrical Blasting

1. With an electric blasting machine you can fire from one to one hundred and fifty charges simultaneously.
2. Electrical blasting allows better tamping and fullest confinement of the gases.
3. Fuller development of the explosive force with consequent greater shattering.
4. Less smoke and fumes and quicker return to the working face.
5. Better results with smaller quantity of explosive therefore cheaper.
6. With the Rheostat and Galvanometer the electric connections can be tested to assure detonation and to avoid misfires.
7. The shot-firer stands at a safe distance and does not operate the blasting machine until everyone is out of the danger zone.
8. There is no need of matches, torches or open flame for detonation of explosives where electrical blasting is practiced.

The dependability of Du Pont electrical blasting equipment, that leaves nothing to chance, but gives the operator control of the entire blasting performance. Du Pont Blasting accessories are correct in design and efficient in service. They are the result of practical experience and scientific research,—the last word in modern, sure-fire blasting equipment.

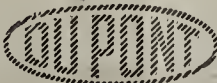
A free copy of our "Blasting Supplies Catalog" will prove helpful. Write for it today to Advertising Division.

E. I. du Pont de Nemours & Co.

Wilmington,

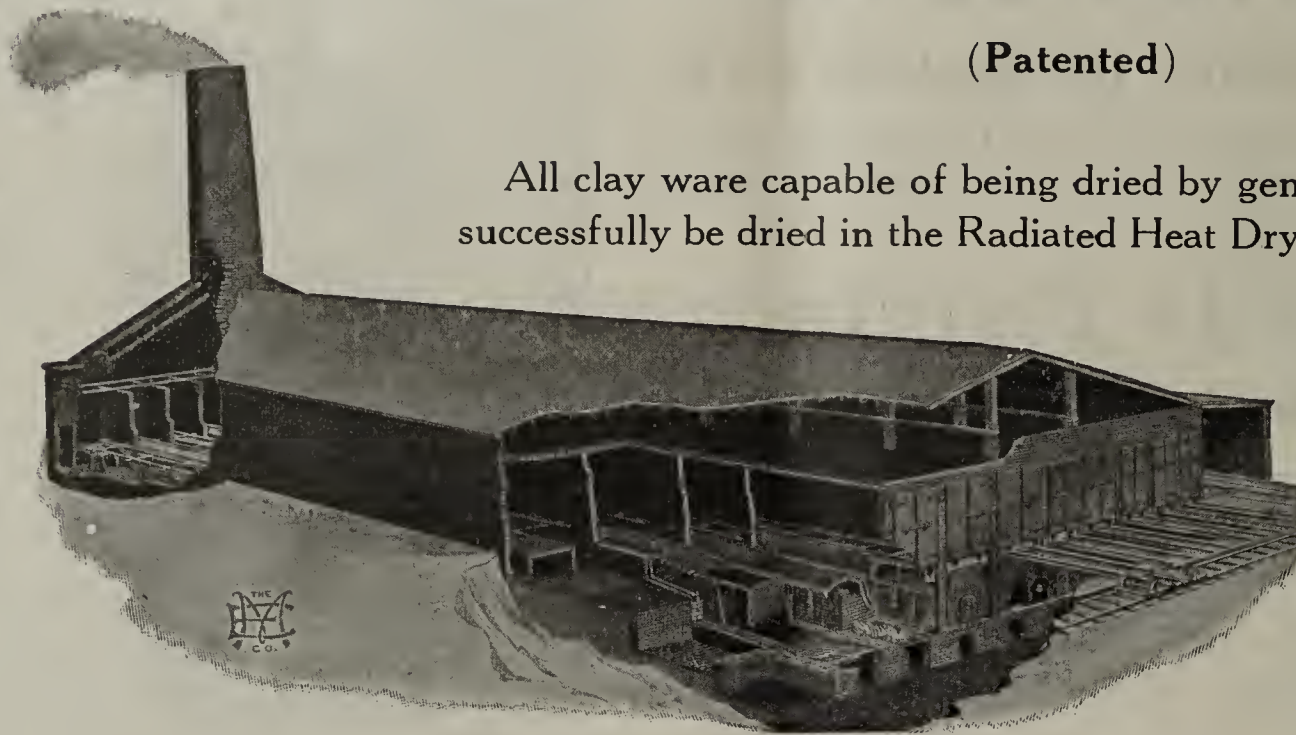
Delaware

Visit Du Pont Products Store When in Atlantic City



THE JUSTICE RADIATED HEAT DRYER

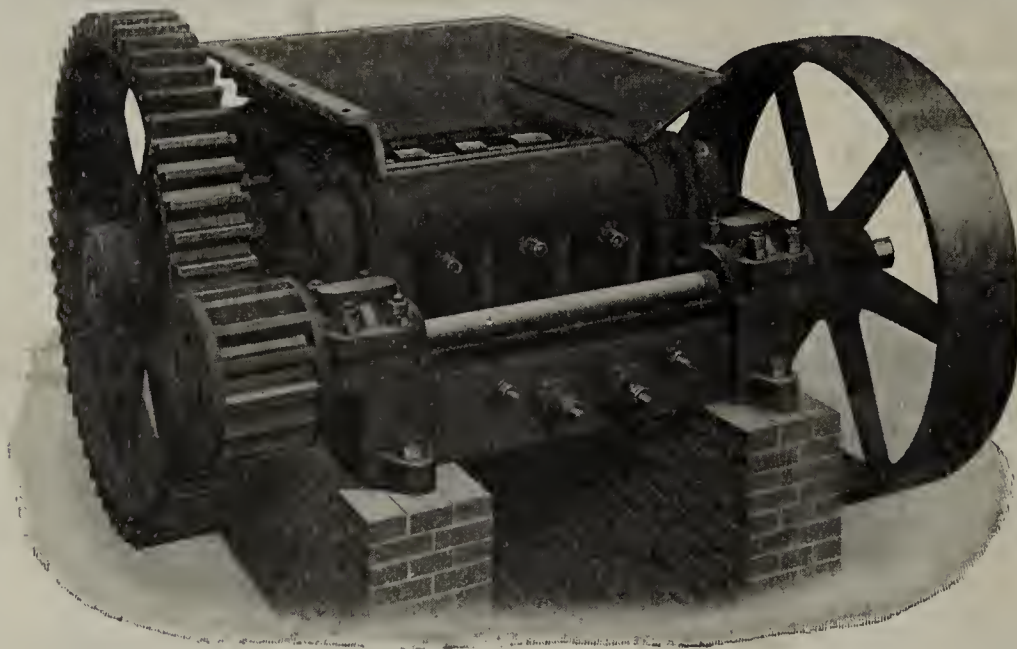
(Patented)



All clay ware capable of being dried by generated heat can most successfully be dried in the Radiated Heat Dryer. This dryer is the most durable and lowest in construction cost. The most economical and lowest in labor operating cost. You should read our New Bulletin and Booklet on dryers and drying.

We build new dryers and reconstruct old ones. Write us now about your requirements in dryers. —*Results will always please.*

40 "Meco" Rock and Shale Crushers sold in one year. Wilson says: "It has proved to be the best investment we have ever made, and recommend to all brick-makers to install one of these Single Roll Crushers at once." Simpson says: "After operating this Crusher twenty-one months we are highly pleased with results obtained."



Rear View of Class "B" Crusher

We furnish, engineer, and install complete crushing outfits. Tell us about that unsatisfactory grinding plant of yours and we will show you how to make it successful and profitable. Have done it for others, can do it again—for you. Write for booklet.

THE MANUFACTURERS EQUIPMENT COMPANY

Direct Selling Agents
for
J. C. Steele & Sons
Statesville, N. C.

DAYTON, OHIO, U. S. A.

G. H. Smith
Western Rep.
3309 E. 37th St.
Kansas City, Mo.

Yes, There Is a Difference in Cutters

—in the movement of cutting wires through the clay column, governing the appearance of the edges of the brick—

—in the principle of operation, governing the accuracy of the cut, and the amount of attention and change of adjustments necessary—

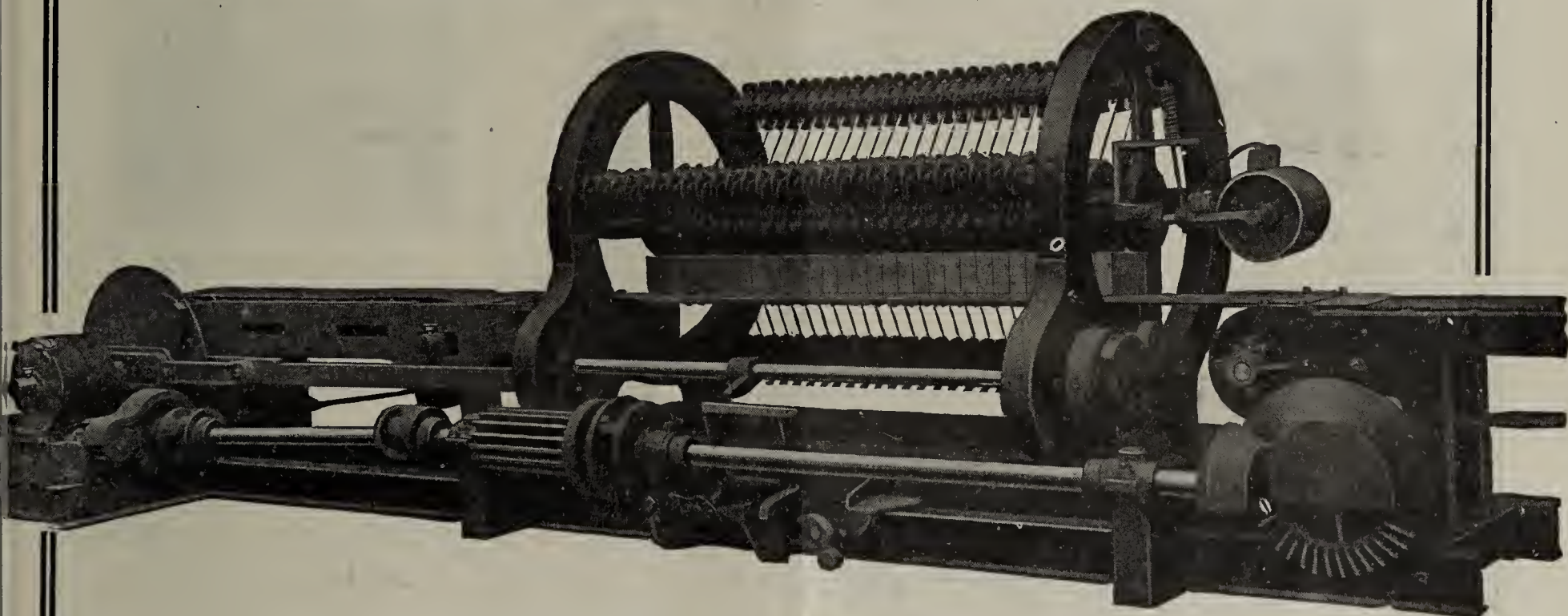
—in the mechanical design and construction, influencing the amount of repairs, and the life of the cutter.

The Freese Rotating Automatic Cutter has a downward shearing wire movement, leaving the edges so nearly perfect that the highest grade of face brick are made on Freese Cutters, without repressing.

The operating principle of the Freese Cutter is simple and understandable—and positive—in its action. It requires practically no attention.

Every wearing part of the Freese Cutter is renewable—platen liners, rollers, carriage trucks, trip, clutch, jaw plates, etc. It can be inexpensively kept in perfect running condition.

If you are having trouble with your cutter, study the operating principle of a Freese—There are several hundred in daily operation.



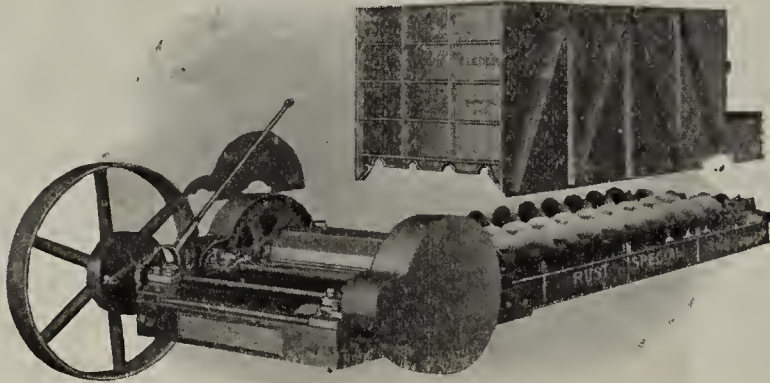
Freese Rotating Automatic Cutter

E. M. FREESE & COMPANY, GALION, OHIO

Dependable Machinery of Proven Efficiency

For Speed and Economy— Use Marion Equipment

"Rust Special" Clay Feeder and Mixer (Feeder Box and Part of Housings Removed)

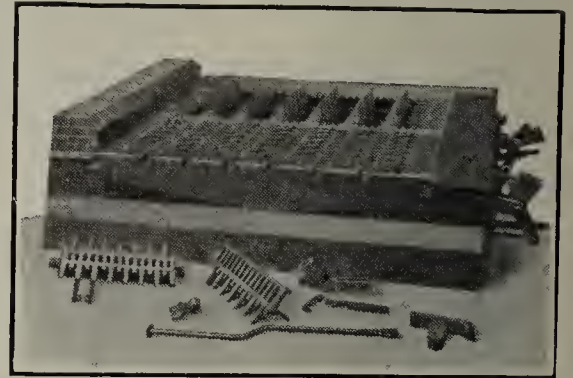


This feeder dispenses with the labor of one to two men. Where the nature of the clay permits, it feeds direct to pug mill, enabling you to omit dry pan. From the time raw material is dumped from cars until clay reaches pug mill, the clay feeder-mixer does all the work without requiring any attention. It improves the mix and gives "a uniform feed of clay into the pug mill, thereby assuring a steady and continuous flow of clay through the die." Write for special bulletin, which describes our line of "Rust Special" Clay Feeder-Mixers.



Alexander Patent Water Gauge

This gauge has a movable soft lead plug, one end of which fits or rests against valve seat. When lead plug wears down and allows gauge to leak, simply give ball one-half turn, which cuts a new seat. The Alexander plug is easy to operate, and will last a long time. Specially priced at \$1.75 (one extra lead plug FREE). Satisfaction guaranteed, subject to return and full credit given. Order now.



Marion Scottdale Grate

1. Prevents clinkers—better burning—more heat.
2. Gives firemen easy and certain control over ash sifting.
3. Saves coal.
4. Eliminates use of slice bar and poker—no chilled fire bed, no damage to fire walls—guaranteed.



Marion Rotary Soot Blower

"We are positive that saving is over 10%," writes Kahn Brick Company, Selma, Ala. This means that the Marion Rotary Soot Blower, in addition to saving fuel, and turning an arduous task into an easy job, has been paying to the Kahn Brick Company's dividends for many years. Easy to install, effective, guaranteed. Let us explain how a Marion Soot Blower can benefit you.

Keystone Portable Kiln Grate

After making a thorough trial of two of these grates, the Crown Potteries Company, Evansville, Ind., ordered 40 more. These kiln grates are making a "material saving in coal and time and firing of the kilns." Order a trial grate for one of your kilns now.



Atlas Car Mover

One man and an Atlas car mover does the work of a dozen men with crowbars. The Atlas moves a car farther at a stroke and with less effort than any other car mover. Works on any rail, whether wet or greasy. Order one today and we will guarantee satisfaction or return full credit. Only \$5.00 F. O. B. Marion.

Marion Machine, Foundry & Supply Co.

P. O. Box 395, Marion, Indiana

Have you a copy of our fully illustrated 63 page Catalog, entitled "Marion Power Plant Equipment?" It not only explains the dependable Marion Line, but also will serve as a valuable handbook for anyone interested in power plant operation. Ask for it.

Classified Advertisements

Classified advertisements are inserted at the following rates: First insertion, eight cents per word, the captions "For Sale," "Wanted," and address, to be counted as a part of the ad. Additional insertions, six cents per word per insertion. No advertisement inserted for less than \$1.00 per insertion. Cash must accompany all orders to insure insertion.

WANTED—HELP

WANTED BY JANUARY 1ST OR EARLIER—A young man that is not afraid of work, to act as understudy to a superintendent in a factory making building blocks. Works located in the south. Chances for advancement A 1. Ceramic training preferred, but not absolutely necessary. Give full particulars in your reply and address: Old Timer, care of "Brick and Clay Record." 12-2-2

OPENING FOR SALESMAN in the Clay and Porcelain Department of concern manufacturing equipment used in the field. Prefer one who has some knowledge of manufacturing Electrical Porcelain. Give full particulars in first letter as to experience, ability, etc. Address: 11-2 Porcelain, care of "Brick and Clay Record." 11-2-TF

WANTED—Superintendent who understands the paving brick business from clay to finished product; one who can handle men and has thoro knowledge of machinery. State salary expected. Address: 11-Machinery, care of "Brick and Clay Record." 11-4

WANTED—Superintendent for stiff-mud brick plant in the South. We want a thoroly experienced and practical man, who is capable of taking charge of the plant and getting results. In answering, please state age, experience and salary expected in first letter. Address: 122-J, care of "Brick and Clay Record." 12-2-2

WANTED—One second-hand auger machine in good condition, capacity 60,000 to 80,000 bricks per day, ten hours. One second-hand hoist, single drum, in good condition, capacity to drag 12,000 lbs. Ascot Tile & Brick Co., Ltd., Ascot, Que., Canada. 12-2-2

WANTED—Superintendent for sewer pipe plant at Monmouth Illinois; one who can handle men and understands manufacturing sewer pipe from clay bank to yard. Address: Streator Clay Mfg. Co., Streator, Ill. 12-2

WANTED—Superintendent for face brick plant in southern part of state. State experience and salary expected. Address: 12-G, care of "Brick and Clay Record." 12-1

WANTED—Superintendent for large fire brick plant. Must be practical and experienced in all departments. Splendid opportunity for the right man. Address: 12-Supt., care of "Brick and Clay Record." 12-3

WANTED—Superintendent for stiff-mud brick (75,000) and hollow-ware plant. Must be experienced in both lines. State experience fully and salary expected first letter. Address: 12-EF, care of "Brick and Clay Record." 12-3

WANTED—Superintendent for fire brick yard located in Pennsylvania; also shipper and two inspectors. Apply 12-Inspector, care of "Brick and Clay Record." 12-TF

WANTED—Pressman kiln setter and brick maker. Big Horn Basin Clay Products Company, Lovell, Wyo. 12-TF

WANTED—Superintendent for medium sized plant. One who understands the manufacturing of face brick and tile. Chance to become interested in plant. Good pay. State age, experience and salary. Address: 25 Brick and Tile, care of "Brick and Clay Record." 12-2-1

WANTED—Superintendent who can build brick plant of 20,000 common brick capacity. Must know how to burn periodic kilns with natural gas. State experience, salary and age. Address: 122-R, care "Brick and Clay Record." 12-2-2

WANTED—Two brick burners; must be thoroughly conversant with burning in up-draft scove kilns. Good wages and steady work the year round. Address: 25-D, care of "Brick and Clay Record." 12-2-1

WANTED—Brickmaker to take charge of machinery and crew making brick. Only practical men need apply. Address: X-25, care of "Brick and Clay Record." 12-2-1

WANTED—POSITIONS.

WANTED—Position as manager or superintendent of face brick. Paving or hollow ware plant. 20 years' experience. Address all replies to 12-Villa Route, care of "Brick and Clay Record." 12-1

WANTED—Position as manager with large, responsible fire brick manufacturer. Only high class position considered. At present employed but desire change. Have had many years' experience in both manufacturing and sales. Address: 11-2W, care of "Brick and Clay Record." 11-2-3

WANTED—Position as superintendent of brick plant by a practical brick-maker who understands the dry press and stiff-mud process of making face brick. Address: 12-BD, care of "Brick and Clay Record." 12-3

WANTED—Position as head burner for paving brick or sewer pipe. 25-Experience, care of "Brick and Clay." 12-2-1

WANTED—EQUIPMENT

WANTED—A full equipment of clay working machinery for the purpose of making side cut brick. This equipment must include dry pans pug mill, auger machine, automatic cutter and two or three hundred dryer cars. Give location and full description. Address: 12-Pug Mill, care of "Brick and Clay Record." 12-1

WANTED—700 to 1000 feet Conveyor Belt 18 to 24 inch to handle shale in the lump. State condition, price and where can inspect. Gas City Brick Co., Ltd., Medicine Hat, Alberta, Canada. 12-3

WANTED—1 Straight way Cable Conveyor System, 2500 flat steel pallets, 10,000 feet black pipe—one inch, 1 Vacuum pump. Must be in good condition. Address: Box 315, Meridian, Mississippi. 12-2

WANTED—Fifty second-hand, double deck, dryer cars—24 inch gauge. State price, condition, shipping point and rate of freight. Suburban Brick Company, Moundsville, W. Va. 12-1

WANTED—About two hundred single deck dryer cars, also a ten-foot pug mill. Write fully. Address: 12-Stiff Mud, care of "Brick and Clay Record." 12-1

WANTED—A good second hand four-mold dry press. Must be in first-class condition and the price right. Address: 12-Press, care "Brick and Clay Record." 12-1

WANTED—Hollow block machine and 9 ft. Stevenson dry pan. American Fire Brick Co., Spokane, Wash. 11-2-1

WANTED—Several steel side dump V-shaped clay cars, 1½ or 2 yards capacity, 36-inch gauge. One Automatic dry clay feeder. One Bensing Automatic side-cut brick-cutting table. Address: 25-A, care of "Brick and Clay Record." 12-2-2

WANTED—Dragline cableway excavator, with 500 to 700 ft. range, steam or electric drive. State full particulars as to capacity, condition, make, price and location. Reply to: 25-Excavator, care of "Brick and Clay Record." 12-2-1

WANTED

Used or second-hand DRYER CARS

with single, double or triple decks. Advise name of make, gauge, condition and full particulars.

Inquire of 12-Dryer Cars, care of "Brick and Clay Record."

12-2-1

WANTED—One second-hand automatic tile cutter, one second-hand semi-brick cutter, one second-hand brick repress. Kewaunee Clay Products Co., Kewaunee, Wis. 12-2-1P

WANTED—Brewer brick and tile machine. State price and condition. Address: Okabena Clay Works, Okabena, Minn. 12-2-1

WANTED—Over-hung 14 to 16 ft. induction fan complete. Address: 25-B, care of "Brick and Clay Record." 12-2-1

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FOR SALE—Highland Brick and Tile Works. Money-maker. Apply to Louis Miller, Highland, Ill. 12-2-1PX

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FOR SALE

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- 1 J. C. McKenzie (Pat) Adrian Brick & Tile Machine with Drain Tile Dies from 3 in. to 8 in.
- 1 C. W. Raymond & Co. Perfection Power Press single mold.
- 1 Bensing Automatic Hollow Brick Cutter made by the J. D. Fate Company.
- 1 E. M. Freese & Co. Class 1 Pug Mill 8 ft. shell.
- 2 Piano Wire Clay Screen each 6 ft. long by 30 inches wide manufactured by Louisville Machinery Company, Louisville, Ohio.
- Following American Clay Mach. Co. Cutting Tables:
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 - 1 No. 3 Hollow Block Cutting Table.
 - 1 Christensen Hollow Ware Cutting Table.
 - 1 No. 18 Horizontal Hand Power Cutting Table for cutting brick.
 - 2 Eagle Double Mold Represses.
 - 2 Steadman lay Crushers, double cage—outside cage 36 in., inside cage 30 in. Also have two extra cages.
 - 1 Bates Corliss Engine 18 in. in diameter, 36 in. stroke manufactured at Joliet, Ill., and band wheel 24 in. wide by 10 ft. diameter.
 - 1 Slide Valve Engine 16 in. in diameter by 24 in. stroke; band wheel 24 in. face by 9 ft. in diameter.

P. Bannon Pipe Company,
Louisville, Ky. 12-4

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FOR SALE—Two Richardson paving block represses and one American Clay Machinery Co.'s No. 342 rotary automatic cutter. These machines are in excellent condition. Address: Bradford Pressed Brick Company, Bradford, Pa. 5-TF

FOR SALE—One International No. 430—8-foot double gear pug mill and one No. 205 International disintegrator. Address: Howard Refractories Co., Dorsey, Md. 11-2-2

ONE Andrews dry brick machine. One Scotts 9 ft. dry pan. Condition good. Garrett Vaught, Box 104, Garrison, Texas. 42-5

FOR SALE—Bonnot automatic standard repress in good condition; had very little usage. Write R. B. Price, Jr., Columbia, Missouri. 10-2-4

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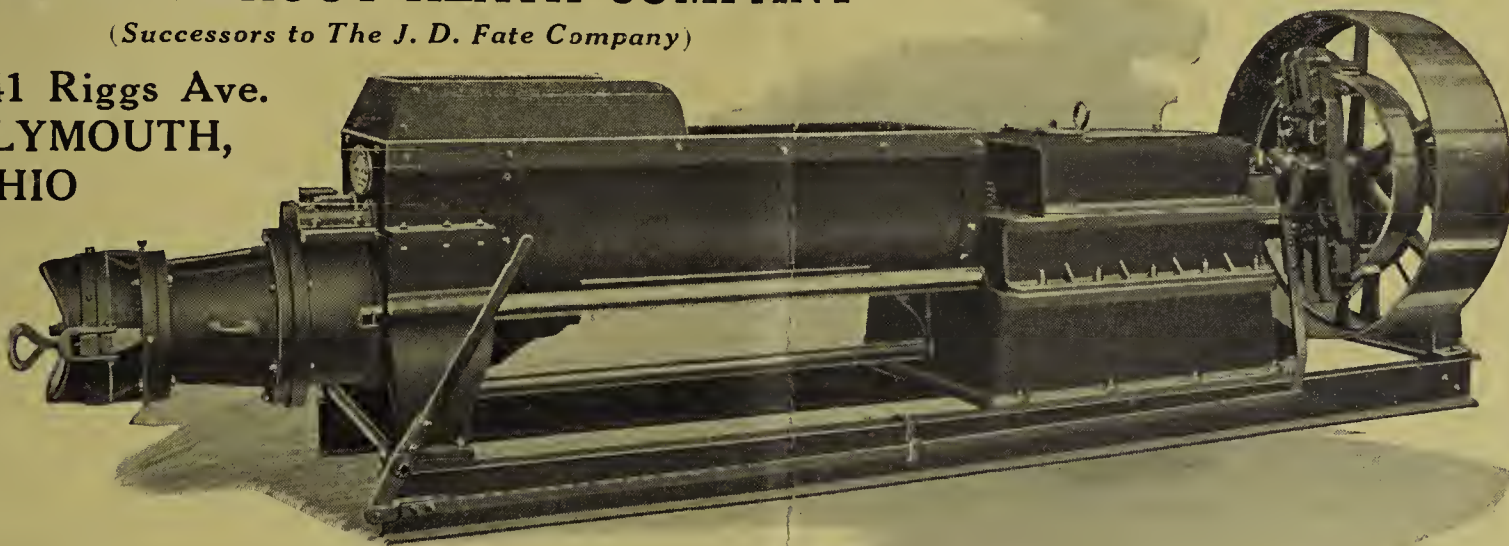
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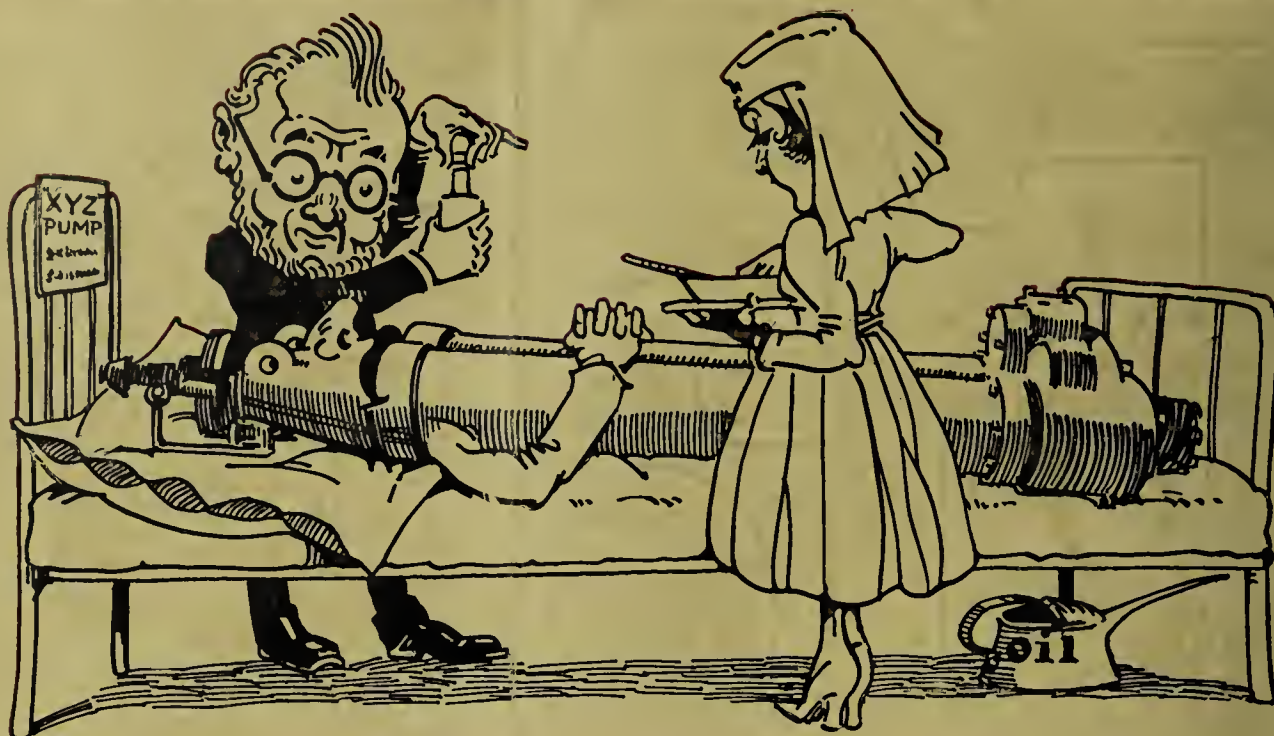
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